

Figure 1A**4.1.1 Heavy Chain DNA**

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ATGGAGTTTG GGCTGAGCTG GGTTCCTC GTTGCTCTTT TAAGAGGTGT 50
CCAGTGTCAG GTGCAGCTGG TGGAGTCTGG GGGAGGCGTG GTCCAGCCTG 100
GGAGGTCCCT GAGACTCTCC TGTGTAGCGT CTGGATTAC CTTCAGTAGC 150
CATGGCATGC ACTGGGTCCG CCAGGCTCCA GGCAAGGGGC TGGAGTGGGT 200
GGCAGTTATA TGGTATGATG GAAGAAATAA ATACTATGCA GACTCCGTGA 250
AGGGCCGATT CACCATCTCC AGAGACAATT CCAAGAACAC GCTGTTTCTG 300
CAAATGAACA GCCTGAGAGC CGAGGACACG GCTGTGTATT ACTGTGCGAG 350
AGGAGGTCAC TTCGGTCCTT TTGACTACTG GGGCCAGGGA ACCCTGGTCA 400
CCGTCTCCTC AGCCTCCACC AAGGGCCCAT CGGTCTTCCC CCTGGCGCCC 450
TGCTCCAGGA GCACCTCCGA GAGCACAGCG GCCCTGGGCT GCCTGGTCAA 500
GGACTACTTC CCCGAACCGG TGACGGTGTC GTGGAAC TCA GGCGCTCTGA 550
CCAGCGGCGT GCACACCTTC CCAGCTGTCC TACAGTCCTC AGGACTCTAC 600
TCCCTCAGCA GCGTGGTGAC CGTGCCCTCC AGCAACTTCG GCACCCAGAC 650
CTACACCTGC AACGTAGATC ACAAGCCCAG CAACACCAAG GTGGACAAGA 700
CAGTTGAGCG CAAATGTTGT GTCGAGTGCC CACCGTGCCC AGCACCACCT 750
GTGGCAGGAC CGTCAGTCTT CCTCTTCCCC CAAAACCCA AGGACACCCT 800
CATGATCTCC CGGACCCCTG AGGTCACGTG CGTGGTGGTG GACGTGAGCC 850
ACGAAGACCC CGAGGTCCAG TTCAACTGGT ACGTGGACGG CGTGGAGGTG 900
CATAATGCCA AGACAAAGCC ACGGGAGGAG CAGTTCAACA GCACGTTCCG 950
TGTGGTCAGC GTCCTACCG TTGTGCACCA GGACTGGCTG AACGGCAAGG 1000
AGTACAAGTG CAAGGTCTCC AACAAAGGCC TCCCAGCCCC CATCGAGAAA 1050
ACCATCTCCA AAACCAAAGG GCAGCCCCGA GAACCACAGG TGTACACCCT 1100
GCCCCATCC CGGGAGGAGA TGACCAAGAA CCAGGTCAGC CTGACCTGCC 1150
TGGTCAAAGG CTTCTACCCC AGCGACATCG CCGTGGAGTG GGAGAGCAAT 1200
GGGCAGCCGG AGAACAATA CAAGACCACA CCTCCCATGC TGGACTCCGA 1250
CGGCTCCTTC TTCTCTACA GCAAGCTCAC CGTGGACAAG AGCAGGTGGC 1300
AGCAGGGGAA CGTCTTCTCA TGCTCCGTGA TGCATGAGGC TCTGCACAAC 1350
CACTACACGC AGAAGAGCCT CTCCCTGTCT CCGGGTAAAT GA 1392

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(SEQ ID NO:27)

4.1.1 Heavy Chain Protein

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MEFGLSWVFL VALLRGVQCQ VQLVESGGGV VQPGRSLRLS CVASGFTFSS 50
HGMHWVRQAP GKGLEWVAVI WYDGRNKYYA DSVKGRFTIS RDNSKNTLFL 100
QMNSLRAEDT AVYYCARGGH FGPFDYWGQG TLVTVSSAST KGPSVFPLAP 150
CSRSTSESTA ALGCLVKDYF PEPVTVSWNS GALTSGVHTF PAVLQSSGLY 200
SLSSVVTGPS SNFGTQTYTC NVDHKPSNTK VDKTVERKCC VECPPCPAPP 250
VAGPSVFLFP PKPKDTLMIS RTPEVTCVVV DVSHEDPEVQ FNWYVDGVEV 300
HNAKTKPREE QFNSTFRVVS VLTVVHQDWL NGKEYKCKVS NKGLPAPIEK 350
TISKTKGQPR EPQVYTLPPS REEMTKNQVS LTCLVKGFYP SDIAVEWESN 400
GQPENNYKTT PPMLDSGDSF FLYSKLTVDK SRWQQGNVFS CSVMHEALHN 450
HYTQKSLSL PGK 463

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(SEQ ID NO:1)

EV270264398US

Figure 1A (continued)**4.1.1 Kappa Chain DNA**

ATGGAAACCC	CAGCGCAGCT	TCTCTTCCTC	CTGCTACTCT	GGCTCCCAGA	50
TACCACCGGA	GAAATTGTGT	TGACGCAGTC	TCCAGGCACC	CTGTCTTTGT	100
CTCCAGGGGA	AAGAGCCACC	CTCTCCTGCA	GGGCCAGTCA	GAGTATTAGC	150
AGCAGCTTCT	TAGCCTGGTA	CCAGCAGAGA	CCTGGCCAGG	CTCCCAGGCT	200
CCTCATCTAT	GGTGCATCCA	GCAGGGCCAC	TGGCATCCCA	GACAGGTTCA	250
GTGGCAGTGG	GTCTGGGACA	GACTTCACTC	TCACCATCAG	CAGACTGGAG	300
CCTGAAGATT	TTGCAGTGTA	TTACTGTCAG	CAGTATGGTA	CCTCACCTTG	350
GACGTTCCGC	CAAGGGACCA	AGGTGGAAAT	CAAACGAACT	GTGGCTGCAC	400
CATCTGTCTT	CATCTTCCCG	CCATCTGATG	AGCAGTTGAA	ATCTGGAACT	450
GCCTCTGTTG	TGTGCCTGCT	GAATAACTTC	TATCCCAGAG	AGGCCAAAGT	500
ACAGTGGAAG	GTGGATAACG	CCCTCCAATC	GGGTAACTCC	CAGGAGAGTG	550
TCACAGAGCA	GGACAGCAAG	GACAGCACCT	ACAGCCTCAG	CAGCACCTTG	600
ACGCTGAGCA	AAGCAGACTA	CGAGAAACAC	AAAGTCTACG	CCTGCGAAGT	650
CACCCATCAG	GGCCTGAGCT	CGCCCGTCAC	AAAGAGCTTC	AACAGGGGAG	700
AGTGTTAG					708

(SEQ ID NO:40)

4.1.1 Kappa Chain Protein

METPAQLLFL	LLLWLPDTTG	EIVLTQSPGT	LSLSPGERAT	LSCRASQSIG	50
SSFLAWYQQR	PGQAPRLLIY	GASSRATGIP	DRFSGSGSGT	DFTLTISRLE	100
PEDFAVYYCQ	QYGTSPWTFG	QGTKVEIKRT	VAAPSVFIFP	PSDEQLKSGT	150
ASVVCLLNNF	YPREAKVQWK	VDNALQSGNS	QESVTEQDSK	DSTYLSSTL	200
TLISKADYEKH	KVYACEVTHQ	GLSSPVTKSF	NRGEC		235

(SEQ ID NO:14)

Figure 1B**4.8.1 Heavy Chain DNA**

ATGGAGTTTG	GGCTGAGCTG	GGTTTTCTCTC	GTTGCTCTTT	TAAGAGGTGT	50
CCAGTGTCTAG	GTGCAGCTGG	TGGAGTCTGG	GGGAGGCGTG	GTCCAGCCTG	100
GGAGGTCCTT	GAGACTCTCC	TGTACAGCGT	CTGGATTAC	CTTCAGTAAC	150
TATGGCATGC	ACTGGGTCCG	CCAGGCTCCA	GGCAAGGGGC	TGGAGTGGGT	200
GGCAGTTATA	TGGTATGATG	GAAGTAATAA	ACACTATGGA	GACTCCGTGA	250
AGGGCCGATT	CACCATCTCC	AGTGACAATT	CCAAGAACAC	GCTGTATCTG	300
CAAATGAACA	GCCTGAGAGC	CGAGGACACG	GCTGTGTATT	ACTGTGCGAG	350
AGGAGAGAGA	CTGGGGTCCT	ACTTTGACTA	CTGGGGCCAG	GGAACCCTGG	400
TCACCGTCTC	CTCAGCCTCC	ACCAAGGGCC	CATCGGTCTT	CCCCCTGGCG	450
CCCTGCTCCA	GGAGCACCTC	CGAGAGCACA	GCGGCCCTGG	GCTGCCTGGT	500
CAAGGACTAC	TTCCCCGAAC	CGGTGACGGT	GTCGTGGAAC	TCAGGCGCTC	550
TGACCAGCGG	CGTGACACAC	TTCCCAGCTG	TCCTACAGTC	CTCAGGACTC	600
TACTCCCTCA	GCAGCGTGGT	GACCGTGCCC	TCCAGCAACT	TCGGCACCCA	650
GACCTACACC	TGCAACGTAG	ATCACAAGCC	CAGCAACACC	AAGGTGGACA	700
AGACAGTTGA	GCGCAAATGT	TGTGTCTGAGT	GCCCACCGTG	CCCAGCACCA	750
CCTGTGGCAG	GACCGTCAGT	CTTCCTCTTC	CCCCCAAAC	CCAAGGACAC	800
CCTCATGATC	TCCCGGACCC	CTGAGGTCAC	GTGCGTGGTG	GTGGACGTGA	850
GCCACGAAGA	CCCCGAGGTC	CAGTTCAACT	GGTACGTGGA	CGGCGTGGAG	900
GTGCATAATG	CCAAGACAAA	GCCACGGGAG	GAGCAGTTCA	ACAGCACGTT	950
CCGTGTGGTC	AGCGTCCTCA	CCGTTGTGCA	CCAGGACTGG	CTGAACGGCA	1000
AGGAGTACAA	GTGCAAGGTC	TCCAACAAAG	GCCTCCCAGC	CCCCATCGAG	1050
AAAACCATCT	CCAAAACCAA	AGGGCAGCCC	CGAGAACCAC	AGGTGTACAC	1100
CCTGCCCCCA	TCCCGGGAGG	AGATGACCAA	GAACCAGGTC	AGCCTGACCT	1150
GCCTGGTCAA	AGGCTTCTAC	CCCAGCGACA	TCGCCGTGGA	GTGGGAGAGC	1200
AATGGGCAGC	CGGAGAACAA	CTACAAGACC	ACACCTCCCA	TGCTGGACTC	1250
CGACGGCTCC	TTCTTCCTCT	ACAGCAAGCT	CACCGTGGAC	AAGAGCAGGT	1300
GGCAGCAGGG	GAACGTCTTC	TCATGCTCCG	TGATGCATGA	GGCTCTGCAC	1350
AACCACTACA	CGCAGAAGAG	CCTCTCCCTG	TCTCCGGGTA	AATGA	1395

(SEQ ID NO:28)

4.8.1 Heavy Chain Protein

MEFGLSWVFL	VALLRGVQCQ	VQLVESGGGV	VQPGSLRLS	CTASGFTFSN	50
YGMHWVRQAP	GKGLEWVAVI	WYDGSNKHYG	DSVKGRFTIS	SDNSKNTLYL	100
QMNSLRAEDT	AVYYCARGER	LGSYFDYWGO	GTLVTVSSAS	TKGPSVFPLA	150
PCSRSTSEST	AALGCLVKDY	FPEPVTVSWN	SGALTSGVHT	FPAVLQSSGL	200
YSLSSVVTVP	SSNFGTQTYT	CNVDPKPSNT	KVDKTKVERKC	CVECPPCPAP	250
PVAGPSVFLF	PPKPKDTLMI	SRTPEVTCVV	VDVSHEDPEV	QFNWYVDGVE	300
VHNAKTKPRE	EQFNSTFRVV	SVLTVVHQDW	LNGKEYKCKV	SNKGLPAPIE	350
KTISKTKGQP	REPQVYTLPP	SREEMTKNQV	SLTCLVKGFY	PSDIAVEWES	400
NGQPENNYKT	TPPMLDSDGS	FFLYSKLTVD	KSRWQQGNVF	SCSVMHEALH	450
NHYTQKSLSL	SPGK				464

(SEQ ID NO:2)

Figure 1B (continued)**4.8.1 Kappa Chain DNA**

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ATGGAAACCC CAGCGCAGCT TCTCTTCCTC CTGCTACTCT GGCTCCCAGA 50
TACCACCGGA GAAATTGTGT TGACGCAGTC TCCAGGCACC CTGTCTTTGT 100
CTCCAGGGGA AAGAGCCACC CTCTCCTGCA GGACCAGTGT TAGCAGCAGT 150
TACTTAGCCT GGTACCAGCA GAAACCTGGC CAGGCTCCCA GGCTCCTCAT 200
CTATGGTGCA TCCAGCAGGG CCACTGGCAT CCCAGACAGG TTCAGTGGCA 250
GTGGGTCTGG GACAGACTTC ACTCTCACCA TCAGCAGACT GGAGCCTGAA 300
GATTTTGCAG TCTATTACTG TCAGCAGTAT GGCATCTCAC CCTTCACTTT 350
CGGCGGAGGG ACCAAGGTGG AGATCAAGCG AACTGTGGCT GCACCATCTG 400
TCTTCATCTT CCCGCCATCT GATGAGCAGT TGAAATCTGG AACTGCCTCT 450
GTTGTGTGCC TGCTGAATAA CTTCTATCCC AGAGAGGCCA AAGTACAGTG 500
GAAGGTGGAT AACGCCCTCC AATCGGGTAA CTCCAGGAG AGTGTACAG 550
AGCAGGACAG CAAGGACAGC ACCTACAGCC TCAGCAGCAC CCTGACGCTG 600
AGCAAAGCAG ACTACGAGAA ACACAAAGTC TACGCCTGCG AAGTCACCCA 650
TCAGGGCCTG AGCTCGCCCG TCACAAAGAG CTTCAACAGG GGAGAGTGTT 700
AG
702

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(SEQ ID NO:41)

4.8.1 Kappa Chain Protein

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METPAQLLFL LLLWLPDTTG EIVLTQSPGT LSLSPGERAT LSCRTSVSSS 50
YLAWYQQKPG QAPRLLIYGA SSRATGIPDR FSGSGSGTDF TLTISRLEPE 100
DFAVYYCQQY GISPFTFGGG TKVEIKRTVA APSVFIFPPS DEQLKSGTAS 150
VVCLLNNFYP REAKVQWKVD NALQSGNSQE SVTEQDSKDS TYSLSSTLTL 200
SKADYEKHKV YACEVTHQGL SSPVTKSFNR GEC 233

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(SEQ ID NO:15)

Figure 1C**4.14.3 Heavy Chain DNA**

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CCTGGGAGGT CCCTGAGACT CTCCTGTGCA GCGTCTGGAT TCACCTTCAG 50
TAGTCATGGC ATCCACTGGG TCCGCCAGGC TCCAGGCAAG GGGCTGGAGT 100
GGGTGGCAGT TATATGGTAT GATGGAAGAA ATAAAGACTA TGCAGACTCC 150
GTGAAGGGCC GATTACCAT CTCCAGAGAC AATTCCAAGA AGACGCTGTA 200
TTTGCAAATG AACAGCCTGA GAGCCGAGGA CACGGCTGTG TATTACTGTG 250
CGAGAGTGGC CCCACTGGGG CCACTTGACT ACTGGGGCCA GGAACCCTG 300
GTCACCGTCT CCTCAGCCTC CACCAAGGGC CCATCGGTCT TCCCCCTGGC 350
GCCCTGCTCC AGGAGCACCT CCGAGAGCAC AGCGGCCCTG GGCTGCCTGG 400
TCAAGGACTA CTTCCCCGAA CCGGTGACGG TGTCGTGGAA CTCAGGCGCT 450
CTGACCAGCG GCGTGCACAC CTTCCCAGCT GTCCTACAG 489

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(SEQ ID NO:29)

4.14.3 Heavy Chain Protein

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PGRSLRLSCA ASGFTFSSHG IHWVRQAPGK GLEWVAVIWY DGRNKDYADS 50
VKGRFTISR D NSKKTLYLQM NSLRAEDTAV YYCARVAPLG PLDYWGQGT 100
VTVSSASTKG PSVFPLAPCS RSTSESTAAL GCLVKDYFPE PVTVSWNSGA 150
LTSGVHTFPA VLQ 163

```

(SEQ ID NO:3)

4.14.3 Kappa Chain DNA

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GGCACCTGT CTTTGTCTCC AGGGGAAAGA GCCACCCTCT CCTGCAGGGC 50
CAGTCAGAGT GTCAGCAGCT ACTTAGCCTG GTACCAGCAG AACCTGGCC 100
AGGCTCCCAG ACTCCTCATC TATGGTGCAT CCAGCAGGGC CACTGGCATC 150
CCAGACAGGT TCAGTGGCAG TGGGTCTGGG ACAGACTTCA CTCTACCAT 200
CAGCAGACTG GAGCCTGAGG ATTTTGCAGT GTATTACTGT CAGCAGTATG 250
GTAGGTCACC ATTCACCTTC GGCCCTGGGA CCAAAGTGGA TATCAAGCGA 300
ACTGTGGCTG CACCATCTGT CTTCATCTTC CCGCCATCTG ATGAGCAGTT 350
GAAATCTGGA ACTGCCTCTG TTGTGTGCCT GCTGAATAAC TTCTATCCCA 400
GAGAGGCCAA AGTACAG 417

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(SEQ ID NO:42)

4.14.3 Kappa Chain Protein

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GTLSLSPGER ATLSCRASQS VSSYLAWYQQ KPGQAPRLLI YGASSRATGI 50
PDRFSGSGSG TDFTLTISRL EPEDFAVYYC QQYGRSPFTF GPGTKVDIKR 100
TVAAPSVFIF PPSDEQLKSG TASVVCLLNN FYPREAKVQ 139

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(SEQ ID NO:16)

Figure 1D**6.1.1 Heavy Chain DNA**

ATGGAGTTTG	GGCTGAGCTG	GGTTTTCTC	GTTGCTCTTT	TAAGAGGTGT	50
CCAGTGTCAG	GTGCAGCTGG	TGGAGTCTGG	GGGAGGCGTG	GTCGAGCCTG	100
GGAGGTCCCT	GAGACTCTCC	TGTACAGCGT	CTGGATTAC	CTTCAGTAGT	150
TATGGCATGC	ACTGGGTCCG	CCAGGCTCCA	GGCAAGGGGC	TGGAGTGGGT	200
GGCAGTTATA	TGGTATGATG	GAAGCAATAA	ACACTATGCA	GACTCCGCGA	250
AGGGCCGATT	CACCATCTCC	AGAGACAATT	CCAAGAACAC	GCTGTATCTG	300
CAAATGAACA	GCCTGAGAGC	CGAGGACACG	GCTGTGTATT	ACTGTGCGAG	350
AGCCGGACTG	CTGGGTTACT	TTGACTACTG	GGGCCAGGGA	ACCCTGGTCA	400
CCGTCTCCTC	AGCCTCCACC	AAGGGCCCAT	CGGTCTTCCC	CCTGGCGCCC	450
TGCTCCAGGA	GCACCTCCGA	GAGCACAGCG	GCCCTGGGCT	GCCTGGTCAA	500
GGACTACTTC	CCCGAACCGG	TGACGGTGTC	GTGGAACCTCA	GGCGCTCTGA	550
CCAGCGGCGT	GCACACCTTC	CCAGCTGTCC	TACAGTCCTC	AGGACTCTAC	600
TCCCTCAGCA	GCGTGGTGAC	CGTGCCCTCC	AGCAACTTCG	GCACCCAGAC	650
CTACACCTGC	AACGTAGATC	ACAAGCCCAG	CAACACCAAG	GTGGACAAGA	700
CAGTTGAGCG	CAAATGTTGT	GTCGAGTGCC	CACCGTGCCC	AGCACCACCT	750
GTGGCAGGAC	CGTCAGTCTT	CCTCTTCCCC	CCAAAACCCA	AGGACACCCT	800
CATGATCTCC	CGGACCCCTG	AGGTCACGTG	CGTGGTGGTG	GACGTGAGCC	850
ACGAAGACCC	CGAGGTCCAG	TTCAACTGGT	ACGTGGACGG	CGTGGAGGTG	900
CATAATGCCA	AGACAAAGCC	ACGGGAGGAG	CAGTTCAACA	GCACGTTCCG	950
TGTGGTCAGC	GTCCTCACCG	TTGTGCACCA	GGACTGGCTG	AACGGCAAGG	1000
AGTACAAGTG	CAAGGTCTCC	AACAAAGGCC	TCCCAGCCCC	CATCGAGAAA	1050
ACCATCTCCA	AAACCAAAGG	GCAGCCCCGA	GAACCACAGG	TGTACACCCT	1100
GCCCCCATCC	CGGGAGGAGA	TGACCAAGAA	CCAGGTCAGC	CTGACCTGCC	1150
TGGTCAAAGG	CTTCTACCCC	AGCGACATCG	CCGTGGAGTG	GGAGAGCAAT	1200
GGGCAGCCGG	AGAACAATA	CAAGACCACA	CCTCCCATGC	TGGACTCCGA	1250
CGGCTCCTTC	TTCCTCTACA	GCAAGCTCAC	CGTGGACAAG	AGCAGGTGGC	1300
AGCAGGGGAA	CGTCTTCTCA	TGCTCCGTGA	TGCATGAGGC	TCTGCACAAC	1350
CACTACACGC	AGAAGAGCCT	CTCCCTGTCT	CCGGGTAAAT	GA	1392

(SEQ ID NO:30)

6.1.1 Heavy Chain Protein

MEFGLSWVFL	VALLRGVQCQ	VQLVESGGGV	VEPGRSLRLS	CTASGFTFSS	50
YGMHWVRQAP	GKGLEWVAVI	WYDGSNKHYA	DSAKGRFTIS	RDNSKNTLYL	100
QMNSLRAEDT	AVYYCARAGL	LGYFDYWQGG	TLVTVSSAST	KGPSVFPLAP	150
CSRSTSESTA	ALGCLVKDYF	PEPVTVSWNS	GALTSGVHTF	PAVLQSSGLY	200
SLSSVVTVPS	SNFGTQTYTC	NVDHKPSNTK	VDKTVERKCC	VECPPCPAPP	250
VAGPSVFLFP	PKPKDTLMIS	RTPEVTCVVV	DVSHEDPEVQ	FNWYVDGVEV	300
HNAKTKPREE	QFNSTFRVVS	VLTVVHQDWL	NGKEYKCKVS	NKGLPAPIEK	350
TISKTKGQPR	EPQVYTLPPS	REEMTKNQVS	LTCLVKGFYP	SDIAVEWESN	400
GQPENNYKTT	PPMLDSGGSF	FLYSKLTVDK	SRWQQGNVFS	CSVMHEALHN	450
HYTQKSLSL	PGK				463

(SEQ ID NO:4)

Figure 1D (continued)**6.1.1 Kappa Chain DNA**

ATGGAAACCC	CAGCGCAGCT	TCTCTTCCTC	CTGCTACTCT	GGCTCCCAGA	50
TACCACCGGA	GAAATTGTGT	TGACGCAGTC	TCCAGGCACC	CTGTCTTTGT	100
CTCCAGGGGA	AAGAGCCACC	CTCTCCTGTA	GGGCCAGTCA	AAGTGTTAGC	150
AGCTACTTAG	CCTGGTACCA	ACAGAAACCT	GGCCAGGCTC	CCAGGCCCCCT	200
CATCTATGGT	GTATCCAGCA	GGGCCACTGG	CATCCCAGAC	AGGTTCAGTG	250
GCAGTGGGTC	TGGGACAGAC	TTCACTCTCA	CCATCAGCAG	ACTGGAGCCT	300
GAAGATTTTG	CAGTGTATTA	CTGTCAGCAG	TATGGTATCT	CACCATTAC	350
TTTCGGCCCT	GGGACCAAAG	TGGATATCAA	ACGAACTGTG	GCTGCACCAT	400
CTGTCTTCAT	CTTCCCGCCA	TCTGATGAGC	AGTTGAAATC	TGGAAGTACC	450
TCTGTTGTGT	GCCTGCTGAA	TAAGTTCTAT	CCCAGAGAGG	CCAAAGTACA	500
GTGGAAGGTG	GATAACGCCC	TCCAATCGGG	TAAGTCCCAG	GAGAGTGTCA	550
CAGAGCAGGA	CAGCAAGGAC	AGCACCTACA	GCCTCAGCAG	CACCTTGACG	600
CTGAGCAAAG	CAGACTACGA	GAAACACAAA	GTCTACGCCT	GCGAAGTCAC	650
CCATCAGGGC	CTGAGCTCGC	CCGTCACAAA	GAGCTTCAAC	AGGGGAGAGT	700
GTTAG					705

(SEQ ID NO:43)

6.1.1 Kappa Chain Protein

METPAQLLFL	LLLWLPD TTG	EIVLTQSPGT	LSLSPGERAT	LSCRASQSVS	50
SYLAWYQQKP	GQAPRPLIYG	VSSRATGIPD	RFSGSGSGTD	FTLTISRLEP	100
EDFAVYYCQQ	YGISPFTFGP	GTKVDIKRTV	AAPSVFIFPP	SDEQLKSGTA	150
SVVCLLN NFY	PREAKVQWKV	DNALQSGNSQ	ESVTEQDSKD	STYSLSSTLT	200
LSKADYEKHK	VYACEVTHQG	LSSPVTKSFN	RGEC		234

(SEQ ID NO:17)

Figure 1E**3.1.1 Heavy Chain DNA**

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GGCGTGGTCC AGCCTGGGAG GTCCCTGAGA CTCTCCTGTG CAGCGTCTGG 50
ATTCACCTTC AGTAGCTATG GCATGCACTG GGTCCGCCAG GCTCCAGGCA 100
AGGGGCTGGA GTGGGTGGCA GTTATATGGT ATGATGGAAG TAATAAATAC 150
TATGCAGACT CCGTGAAGGG CCGATTCAAC ATCTCCAGAG ACAATTCCAA 200
GAACACGCTG TATCTGCAAA TGAACAGCCT GAGAGCCGAG GACACGGCTG 250
TGTATTACTG TGCAGAGAGG GCCCGTATAA TAACCCCTTG TATGGACGTC 300
TGGGGCCAAG GGACCACGGT CACCGTCTCC TCAGCCTCCA CCAAGGGCCC 350
ATCGGTCTTC CCCCTGGCGC CCTGCTCCAG GAGCACCTCC GAGAGCACAG 400
CGGCCCTGGG CTGCCTGGTC AAGGACTACT TCCCCGAACC GGTGACGGTG 450
TCGTGGAAC T CAGGCGCTCT GACCAGCGGC GTGCACACCT TCCAGCTGT 500
CCTACAG 507

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(SEQ ID NO:31)

3.1.1 Heavy Chain Protein

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GVVQPGRSLR LSCAASGFTF SSYGMHWVRQ APGKGLEWVA VIWYDGSNKY 50
YADSVKGRFT ISRDNSKNTL YLQMNSLRAE DTAVYYCARG ARIITPCMDV 100
WQGTTTVTVS SASTKGPSVF PLAPCSRSTS ESTAALGCLV KDYFPEPVTV 150
SWNSGALTSG VHTFPAVLQ 169

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(SEQ ID NO:5)

3.1.1 Kappa Chain DNA

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CAGTCTCCAT CCTCCCTGTC TGCATCTGTA GGAGACAGAG TCACCATCAC 50
TTGCCGGGCA AGTCAGAGCA TTAACACCTA TTTAATTTGG TATCAGCAGA 100
AACCAGGGAA AGCCCCTAAC TTCCTGATCT CTGCTACATC CATTTTGCAA 150
AGTGGGGTCC CATCAAGGTT CCGTGGCAGT GGCTCTGGGA CAAATTTTCA 200
TCTCACCATC AACAGTCTTC ATCCTGAAGA TTTTGCAACT TACTACTGTC 250
AACAGAGTTA CAGTACCCCA TTCACCTTCG GCCCTGGGAC CAAAGTGGAT 300
ATCAAACGAA CTGTGGCTGC ACCATCTGTC TTCATCTTCC CGCCATCTGA 350
TGAGCAGTTG AAATCTGGAA CTGCCTCTGT TGTGTGCCTG CTGAATAACT 400
TCTATCCAG AGAGGCCAAA GTACAGTGGA AGGTGGATAA CGCCCTCCAA 450
TCGGGTAA 458

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(SEQ ID NO:44)

3.1.1 Kappa Chain Protein

```

QSPSSLSASV GDRVITTCRA SQSINTYLIW YQQKPGKAPN FLISATSILQ 50
SGVPSRFRGS GSGTNFTLTI NSLHPEDFAT YYCQQSYSTP FTFGPGTKVD 100
IKRTVAAPSV FIFPPSDEQL KSGTASVVCL LNNFYPREAK VQWKVDNALQ 150
SG 152

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(SEQ ID NO:18)

Figure 1F**4.10.2 Heavy Chain DNA**

```

GGCGTGGTCC AGCCTGGGAG GTCCCTGAGA CTCTCCTGTG TAGCGTCTGG 50
ATTCATCTTC AGTAGTCATG GCATCCACTG GGTCCGCCAG GCTCCAGGCA 100
AGGGGCTGGA GTGGGTGGCA GTTATATGGT ATGATGGAAG AAATAAAGAC 150
TATGCAGACT CCGTGAAGGG CCGATTCAAC ATCTCCAGAG ACAATTCCAA 200
GAACACGCTG TATTTGCAAA TGAACAGCCT GAGAGCCGAG GACACGGCTG 250
TGTATTACTG TGCAGAGAGT GCCCCTACTG GGCCACTTGA CTACTGGGGC 300
CAGGGAACCC TGGTCACCGT CTCCTCAGCC TCCACCAAGG GCCCATCGGT 350
CTTCCCCCTG GCGCCCTGCT CCAGGAGCAC CTCCGAGAGC ACAGCGGCCC 400
TGGGCTGCCT GGTCAAGGAC TACTTCCCCG AACCGGTGAC GGTGTCGTGG 450
AACTCAGGCG CTCTGACCAG CGGCGTGCAC ACCTTCCCAG CTGTCCTACA 500
G 501

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(SEQ ID NO:32)

4.10.2 Heavy Chain Protein

```

GVVQPGRSLR LSCVASGFIF SSHGIHWVRQ APGKGLEWVA VIWYDGRNKD 50
YADSVKGRFT ISRDNSKNL YLQMNSLR AE DTAVYYCARV APLGPLDYWG 100
QGTLVTVSSA STKGPSVFPL APCSRSTSES TAALGCLVKD YFPEPVTVSW 150
NSGALTSGVH TFPVAVLQ 167

```

(SEQ ID NO:6)

4.10.2 Kappa Chain DNA

```

TCTCCAGGCA CCCTGTCTTT GTCTCCAGGG GAAAGAGCCA CCCTCTCCTG 50
CAGGGCCAGT CAGAGTATTA GCAGCAATTT CTTAGCCTGG TACCAGCAGA 100
AACCTGGCCA GGCTCCCAGG CTCCTCATCT ATCGTCCATC CAGCAGGGCC 150
ACTGGCATCC CAGACAGTTT CAGTGGCAGT GGGTCTGGGA CAGACTTCAC 200
TCTCACCATC AGCAGACTGG AGCCTGAGGA TTTTGCATTA TATTACTGTC 250
AGCAGTATGG TACGTCACCA TTCACTTTCG GCCCTGGGAC CAAAGTGGAT 300
ATCAAGCGAA CTGTGGCTGC ACCATCTGTC TTCATCTTCC CGCCATCTGA 350
TGAGCAGTTG AAATCTGGAA CTGCCTCTGT TGTGTGCCTG CTGAATAACT 400
TCTATCCCAG AGAGGCCAAA GTACAG 426

```

(SEQ ID NO:45)

4.10.2 Kappa Chain Protein

```

SPGTLSSLSPG ERATLSCRAS QSISSNFLAW YQKPGQAPR LLIYRPSSRA 50
TGIPDSFSGS GSGTDFTLTI SRLEPEDFAL YYCQYGTSP FTFGPGTKVD 100
IKRTVAAPSV FIFPPSDEQL KSGTASVVCL LNNFYPPREK VQ 142

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(SEQ ID NO:19)

Figure 1G**2.1.3 Heavy Chain DNA**

TCGGGCCCCAG	GACTGGTGAA	GCCTTCACAG	ATCCTGTCCC	TCACCTGCAC	50
TGTCTCTGGT	GGCTCCATCA	GCAGTGGTGG	TCACTACTGG	AGCTGGATCC	100
GCCAGCACCC	AGGGAAGGGC	CTGGAGTGGA	TTGGGTACAT	CTATTACATT	150
GGGAACACCT	ACTACAACCC	GTCCCTCAAG	AGTCGAGTTA	CCATATCAGT	200
AGACACGTCT	AAGAACCAGT	TCTCCCTGAA	GCTGAGCTCT	GTGACTGCCG	250
CGGACACGGC	CGTGTATTAT	TGTGCGAGAG	ATAGTGGGGA	CTACTACGGT	300
ATAGACGTCT	GGGGCCAAGG	GACCACGGTC	ACCGTCTCCT	CAGCTTCCAC	350
CAAGGGCCCA	TCCGTCTTCC	CCCTGGCGCC	CTGCTCCAGG	AGCACCTCCG	400
AGAGCACAGC	CGCCCTGGGC	TGCCTGGTCA	AGGACTACTT	CCCCGAACCG	450
GTGACGGTGT	CGTGGAATC	AGGCGCCCTG	ACCAGCGGCG	TGCACACCTT	500
CCCGGCTGTC	CTACAA				516

(SEQ ID NO:33)

2.1.3 Heavy Chain Protein

SGPGLVKPSQ	ILSLTCTVSG	GSISSGGHYW	SWIRQHPGKG	LEWIGYIYYI	50
GNTYYNP SLK	SRVTISVDTS	KNQFSLKLSS	VTAADTAVYY	CARDSGDYYG	100
IDVWGQGT TV	TVSSASTKGP	SVFPLAPCSR	STSESTAALG	CLVKDYFPEP	150
VTVSWNSGAL	TSGVHTFPAV	LQ			172

(SEQ ID NO:7)

2.1.3 Kappa Chain DNA

TCTCCAGACT	TTCAGTCTGT	GACTCCAAAG	GAGAAAGTCA	CCATCACCTG	50
CCGGGCCAGT	CAGAGCATTG	GTAGTAGCTT	ACATTGGTAT	CAGCAGAAAC	100
CAGATCAGTC	TCCAAAGCTC	CTCATCAAGT	ATGCTTCCCA	GTCCTTCTCT	150
GGGGTCCCCT	CGAGGTT CAG	TGGCAGTGGA	TCTGGGACAG	ATTTACCCCT	200
CACCATCAAT	AGCCTGGAAG	CTGAAGATGC	TGCAACGTAT	TACTGTCATC	250
AGAGTAGTAG	TTTACCGCTC	ACTTTCGGCG	GAGGGACCAA	GGTGGAGATC	300
AAACGAACTG	TGGCTGCACC	ATCTGTCTTC	ATCTTCCCCG	CATCTGATGA	350
GCAGTTGAAA	TCTGGAAGT	CCTCTGTTGT	GTGCCTGCTG	AATAACTTCT	400
ATCCCAGAGA	GGCCAAAGTA	CAGTGGAAGG	TGGATAACGC	CCTCCAATCG	450
GGTAACTCCC	AGGAG				465

(SEQ ID NO:46)

2.1.3 Kappa Chain Protein

SPDFQSVTPK	EKVTITCRAS	QSIGSSLHWY	QOKPDQSPKL	LIKYASQSFS	50
GVPSRFGSG	SGTDFTLTIN	SLEAEDAATY	YCHQSSSLPL	TFGGGTVKEI	100
KRTVAAPSVF	IFPPSDEQLK	SGTASVCLL	NNFYPREAKV	QWKVDNALQS	150
GNSQE					155

(SEQ ID NO:20)

Figure 1H**4.13.1 Heavy Chain DNA**

```

CCTGGGAGGT CCCTGAGACT CTCCTGTGCA GCGTCTGGAT TCACCTTCAG 50
TAGTCATGGC ATCCACTGGG TCCGCCAGGC TCCAGGCAAG GGGCTGGAGT 100
GGGTGGCAGT TATATGGTAT GATGGAAGAA ATAAAGACTA TGCAGACTCC 150
GTGAAGGGCC GATTCACCAT CTCCAGAGAC AATTCCAAGA ACACGCTGTA 200
TTTGCAAATG AACAGCCTGA GAGCCGAGGA CACGGCTGTG TATTACTGTG 250
CGAGAGTGGC CCCACTGGGG CCACTTGACT ACTGGGGCCA GGAACCCCTG 300
GTCACCGTCT CCTCAGCCTC CACCAAGGGC CCATCGGTCT TCCCCCTGGC 350
GCCCTGCTCC AGGAGCACCT CCGAGAGCAC AGCGGCCCTG GGCTGCCTGG 400
TCAAGGACTA CTTCCCCGAA CCGGTGACGG TGTCGTGGAA CTCAGGCGCT 450
CTGACCAGC                                         459

```

(SEQ ID NO:34)

4.13.1 Heavy Chain Protein

```

PGRSLRLSCA ASGFTFSSHG IHWVRQAPGK GLEWVAVIWY DGRNKDYADS 50
VKGRFTISRD NSKNTLYLQM NSLRAEDTAV YYCARVAPLG PLDYWGQGT 100
VTVSSASTKG PSVFPLAPCS RSTSESTAAL GCLVKDYFPE PVTVSWNSGA 150
LTS                                         153

```

(SEQ ID NO:8)

4.13.1 Kappa Chain DNA

```

CAGTCTCCAG GCACCCTGTC TTTGTCTCCA GGGGAAAGAG CCACCCTCTC 50
CTGCAGGGCC AGTCAGAGTG TCAGCAGCTA CTTAGCCTGG TACCAGCAGA 100
AACCTGGCCA GGCTCCCAGG CTCCTCATCT ATGGTGCATC CAGCAGGGCC 150
ACTGGCATCC CAGACAGGTT CAGTGGCAGT GGGTCTGGGA CAGACTTCAC 200
TCTCACCATC AGCAGACTGG AGCCTGAGGA TTTTGCAGTG TATTACTGTC 250
AACAGTATGG TAGGTCACCA TTCAC TTTCG GCCCTGGGAC CAAAGTAGAT 300
ATCAAGCGAA CTGTGGCTGC ACCATCTGTC TTCATCTTCC CGCCATCTGA 350
TGAGCAGTTG AAATCTGGAA CTGCCTCTGT TGTGTGCCTG CTGAATAACT 400
TCTATCCCAG AGAGGCCAAA GTACAGTGGA AAGGTGGATA 440

```

(SEQ ID NO:47)

4.13.1 Kappa Chain Protein

```

QSPGTLSSLSP GERATLSCRA SQSVSSYLAW YQKPGQAPR LLIYGASSRA 50
TGIPDRFSGS GSGTDFTLTI SRLEPEDFAV YYCQYGRSP FTFGPGTKVD 100
IKRTVAAPSV FIFPPSDEQL KSGTASVVCL LNNFYPRK VQWKGG 146

```

(SEQ ID NO:21)

Figure 1l**11.2.1 Heavy Chain DNA**

GGCGTGGTCC	AGCCTGGGAG	GTCCCTGAGA	CTCTCCTGTG	CAGCGTCTGG	50
ATTCACCTTC	AGTAGCTATG	GCATGCACTG	GGTCCGCCAG	GCTCCAGGCA	100
AGGGGCTGGA	GTGGGTGGCA	GTTATATGGT	ATGATGGAAG	TAATAAATAC	150
TATGCAGACT	CCGTGAAGGG	CCGATTCACT	ATCTCCAGAG	ACAATTCCAA	200
GAACACGCTG	TATCTGCAAA	TGAACAGCCT	GAGAGCCGAG	GACACGGCTG	250
TGTATTACTG	TGCGAGAGAT	CCGAGGGGAG	CTACCCTTTA	CTACTACTAC	300
TACCGGTKGG	ACGTCTGGGG	CCAAGGGACC	ACGGTCACCG	TCTCCTCAGC	350
CTCCACCAAG	GGCCCATCGG	TCTTCCCCCT	GGCGCCCTGC	TCCAGGAGCA	400
CCTCCGAGAG	CACAGCGGCC	CTGGGCTGCC	TGGTCAAGGA	CTACTTCCCC	450
GAACCGGTGA	CGGTGTCGTG	GAACTCAGGC	GCTCTGACCA	GCGGCGTGCA	500
CAC					503

(SEQ ID NO:35)

11.2.1 Heavy Chain Protein

GVVQPGRSLR	LSCAASGFTF	SSYGMHWVRQ	APGKGLEWVA	VIWYDGSNKY	50
YADSVKGRFT	ISRDN SKNTL	YLQMN SLRAE	DTAVYYCARD	PRGATLYYYY	100
YRXDVWGQGT	TVTVSSASTK	GPSVFPLAPC	SRSTSESTAA	LGCLVKDYFP	150
EPVTVSWNSG	ALTSGVH				167

(SEQ ID NO:9)

11.2.1 Kappa Chain DNA

CCATCCTCCC	TGTCTGCATC	TGTAGGAGAC	AGAGTCACCA	TCACTTGCCG	50
GGCAAGTCAG	AGCATTAACA	GCTATTTAGA	TTGGTATCAG	CAGAAACCAG	100
GGAAAGCCCC	TAAACTCCTG	ATCTATGCTG	CATCCAGTTT	GCAAAGTGGG	150
GTCCCATCAA	GGTTCAGTGG	CAGTGGATCT	GGGACAGATT	TCACTCTCAC	200
CATCAGCAGT	CTGCAACCTG	AAGATTTTGC	AACTTACTAC	TGTCAACAGT	250
ATTACAGTAC	TCCATTCACT	TTCGGCCCTG	GGACCAAAGT	GGAAATCAAA	300
CGAACTGTGG	CTGCACCATC	TGTCTTCATC	TTCCCGCCAT	CTGATGAGCA	350
GTTGAAATCT	GGAAGTGCCT	CTGTTGTGTG	CCTGCTGAAT	AACTTCTATC	400
CCAGAGAGGC	CAAAGTA				417

(SEQ ID NO:48)

11.2.1 Kappa Chain Protein

PSSLSASVGD	RVTITCRASQ	SINSYLDWYQ	QKPGKAPKLL	IYAASSLQSG	50
VPSRFSGSGS	GTDFTLTISS	LQPEDFATYY	CQQYYSTPFT	FPGPTKVEIK	100
RTVAAPSVFI	FPPSDEQLKS	GTASVVCLLN	NFYPPREKAV		139

(SEQ ID NO:22)

Figure 1J**11.6.1 Heavy Chain DNA**

```

GGCGTGGTCC AGCCTGGGAG GTCCCTGAGA CTCTCCTGTG CAGCGTCTGG 50
ATTCACCTTC AGTAGCTATG GCATGCACTG GGTCCGCCAG GCTCCAGGCA 100
AGGGGCTGGA GTGGGTGGCA GTTATATGGT ATGATGGAAG TCATAAATAC 150
TATGCAGACT CCGTGAAGGG CCGATTCAAC ATCTCCAGAG ACAATTCCAA 200
GAACACGCTG TATCTGCAA TGAACAGCCT GAGAGCCGAG GACACGGCTG 250
TGTATTACTG TGCAGAGAGG GCTGTAGTAG TACCAGCTGC TATGGACGTC 300
TGGGGCCAAG GGACCACGGT CACCGTCTCC TCAGCCTCCA CCAAGGGCCC 350
ATCGGTCTTC CCCCTGGCGC CCTGCTCCAG GAGCACCTCC GAGAGCACAG 400
CGGCCCTGGG CTGCCTGGTC AAGGACTACT TCCCCGAACC GGTGACGGTG 450
T

```

(SEQ ID NO:36)

11.6.1 Heavy Chain Protein

```

GVVQGRSLR LSCAASGFTF SSYGMHWVRQ APGKGLEWVA VIWYDGS HKY 50
YADSVKGRFT ISRDN SKNTL YLQMNSLRAE DTAVYYCARG AVVVPAAMDV 100
WGQGT TVTVS SASTKGPSVF PLAPCSRSTS ESTAALGCLV KD YFPEPVTV 150
S

```

(SEQ ID NO:10)

11.6.1 Kappa Chain DNA

```

ACCCAGTCTC CATCCTCCCT GTCTGCATCT GTAGGAGACA GAGTCACCAT 50
CACTTGCCGG GCAAGTCAGA ACATTAGCAG GTATTTAAAT TGGTATCAAC 100
AGAAACCAGG GAAAGCCCCT AAGTTCCTGA TCTATGTTGC ATCTATTTTG 150
CAAAGTGGGG TCCCATCAGG GTTCAGTGCC AGTGGATCTG GGCCAGATTT 200
CACTCTNACC ATCAGCAGTC TGCAACCTGA AGATTTTGCA ACTTACTACT 250
GTCAACAGAG TTACAGTACC CCATTCACTT TCGGCCCTGG GACCAAAGTG 300
GATATCAAAC GAACTGTGGC TGCACCATCT GTCTTCATCT TCCCGCCATC 350
TGATGAGCAG TTGAAATCTG GAACTGCCTC TGTTGTGTGC CTGCTGAATA 400
AC

```

(SEQ ID NO:49)

11.6.1 Kappa Chain Protein

```

TQSPSSLSAS VGDRVITTCR ASQNISR YLN WYQQKPGKAP KFLIYVASIL 50
QSGVPSGFS SSGSPDFTLT ISSLPEDFA TYYCQQSYST PFTFGPGTKV 100
DIKRTVAAPS VFIFPPSDEQ LKSGTASVVC LLNN

```

(SEQ ID NO:23)

Figure 1K**11.7.1 Heavy Chain DNA**

```

GTGGTCCAGC CTGGGAGGTC CCTGAGACTC TCCTGTGCAG CGTCTGGATT 50
CACCTTCAGT AGCNGTGCCA TGCAC TGGGT CCGCCAGGCT CCAGGCAAGG 100
GGCTGGAGTG GGTGGCAGTT ATATGGTCTG ATGGAAGTCA TAAATACTAT 150
GCAGACTCCG TGAAGGGCCG ATTCACCATC TCCAGAGACA ATTCCAAGAA 200
CACGCTGTAT CTGCAAATGA ACAGCCTGAG AGCCGAGGAC ACGGCTGTGT 250
ATTACTGTGC GAGAGGAACT ATGATAGTAG TGGGTACCCT TGACTACTGG 300
GGCCAGGGAA CCCTGGTCAC CGTCTCCTCA GCCTCCACCA AGGGCCCATC 350
GGTCTTCCCC CTGGCGCCCT GCTCCAGGAG CACCTCCGAG AGCACAGCGG 400
CCCTGGGCTG CCTGGTCAAG GACTACTTCC CCGAACCG 438

```

(SEQ ID NO:37)

11.7.1 Heavy Chain Protein

```

VVQPGRSLRL SCAASGFTFS SXGMHWVRQA PGKGLEWVAV IWSDGSHKYY 50
ADSVKGRFTI SRDNSKNTLY LQMNSLRAED TAVYYCARGT MIVVGTLDYW 100
QGQTLTVTSS ASTKGPSVFP LAPCSRSTSE STAALGCLVK DYFPEP 146

```

(SEQ ID NO:11)

11.7.1 Kappa Chain DNA

```

ACCCAGTCTC CATCCTCCCT GTCTGCATCT GTAGGAGACA GAGTCACCAT 50
CACTTGCCGG GCAAGTCAGA GCATTTGCAA CTATTTAAAT TGGTATCAGC 100
AGAAACCAGG AAAAGCCCCCT AGGGTCCTGA TCTATGCTGC ATCCAGTTTG 150
CAAGGTGGGG TCCCGTCAAG GTTCAGTGGC AGTGGATCTG GGACAGATTG 200
CACTCTCACC ATCAGCAGTC TGCAACCTGA AGATTTTGCA ACTTACTACT 250
GTCAACAGAG TTACACTACC CCATTCACCT TCGGCCCTGG GACCAGAGTG 300
GATATCGAAC GAACTGTGGC TGCACCATCT GTCTTCATCT TCCCGCCATC 350
TGATGAGCAG TTGAAATCTG GAACTGCCTC TGTTGTGTGC CTGCTGAATA 400
ACTTCTATCC CAGAGAGGCC AAAGTACAGT GGAAGGTGGA TAACGCCTAT 450
T

```

(SEQ ID NO:50)

11.7.1 Kappa Chain Protein

```

TQSPSSLSAS VGDRVITICR ASQSICNYLN WYQQKPGKAP RVLIYAASSL 50
QGGVPSRFSG SGSGIDCTLT ISSLPEDFA TYYCQQSYIT PFTFGPGTRV 100
DIERTVAAPS VFIFPPSDEQ LKSGTASVVC LLNNFYPREA KVQWKVDNAY 150

```

(SEQ ID NO:24)

Figure 1L**12.3.1.1 Heavy Chain DNA**

TCCTGTGCAG	CGTCTGGATT	CACCTTCAGT	TACTATGGCG	TCTGGGGGAG	50
GCGTGGTCCA	GCCTGGGAGG	TCCCTGAGAC	TCTCCTGTGC	AGCGTCTGGA	100
TTCACCTTCA	GTAGCTATGG	CGTGCACTGG	GTCCGCCAGG	CTCCAGGCAA	150
GGGGCTGGAG	TGGGTGGCAG	TTATATGGTA	TGATGGAAGT	AATAAATACT	200
ATGCAGACTC	CGTGAAGGGC	CGATTACCA	TCTCCAGAGA	CAATTCCAAG	250
AGCACGCTGT	ATCTGCAAA	GAACAGCCTG	AGAGCCGAGG	ACACGGCTGT	300
GTATTATTGT	GCGAGAGACT	CGTATTACGA	TTTTTGGAGT	GGTCGGGGCG	350
GTATGGACGT	CTGGGGCCAA	GGGACCACGG	TCACCGTCTC	CTCAGCCTCC	400
ACCAAGGGCC	CATCGGTCTT	CCCCCTGGCG	CCCTGCTCCA	GGAGCACCTC	450
CGAGAGCACA	GCGGCCCTGG	GCTGCCTGGT	CAAGGACTAC	TTCCCCGAAC	500
CGGTGACGGT	GTCGTGGAAC	TCAGGCGCTC	TGACCAGCGG	CGTGCACACC	550
TTCCCAGCTG	TC				562

(SEQ ID NO:38)

12.3.1.1 Heavy Chain Protein

SGGGVVQPGR	SLRLSCAASG	FTFSSYGVHW	VRQAPGKGLE	WVAVIWDGGS	50
NKYYADSVKG	RFTISRDNK	STLYLQMNSL	RAEDTAVYYC	ARDSYYDFWS	100
GRGGMVDVWQ	GTTVTVSSAS	TKGPSVFPLA	PCSRSTSEST	AALGCLVKDY	150
FPEPVTVSWN	SGALTSGVHT	FPAV			174

(SEQ ID NO:12)

12.3.1.1 Kappa Chain DNA

CCACTCTCCC	TGCCCCTCAC	CCTTGGACAG	CCGGCCTCCA	TCTCCTGCAG	50
GTCTAGTCAA	AGCCTCGTAT	ACAGTGATGG	AAACACCTAC	TTGAATTGGT	100
TTCAGCAGAG	GCCAGGCCAA	TCTCCAAGGC	GCCTAATTTA	TAAGGTTTCT	150
AACTGGGACT	CTGGGGTCCC	AGACAGATTC	AGCGGCAGTG	GGTCAGGCAC	200
TGATTTCACA	CTGAAAATCA	GCAGGGTGGA	GGCTGAGGAT	GTTGGGGTTT	250
ATTACTGCAT	GCAAGGTTCA	CACTGGCCTC	CGACGTTTCGG	CCAAGGGACC	300
AAGGTGGAAA	TCAAACGAAC	TGTGGCTGCA	CCATCTGTCT	TCATCTTCCC	350
GCCATCTGAT	GAGCAGTTGA	AATCTGGAAC	TGCCTCTGTT	GTGTGCCTGC	400
TGAATAACTT	CTATCCCAC				419

(SEQ ID NO:51)

12.3.1.1 Kappa Chain Protein

PLSLPVTLGQ	PASISCRSSQ	SLVYSDGNTY	LNWFQQRPGQ	SPRRLIYKVS	50
NWDSGVPDRF	SGSGSGTDFT	LKISRVEAED	VGYYCMQGS	HWPPTFGQGT	100
KVEIKRTVAA	PSVFIFPPSD	EQLKSGTASV	VCLLNNFYP		139

(SEQ ID NO:25)

Figure 1M**12.9.1.1 Heavy Chain DNA**

GTCCAGCCTG	GGAGGTCCCT	GAGACTCTCC	TGTGCAGCGT	CTGGATTCAC	50
CTTCAGTAAC	TATGCCATGC	ACTGGGTCCG	CCAGGCTCCA	GGCAAGGGGC	100
TGGAGTGGGT	GGTAGTTATT	TGGCATGATG	GAAATAATAA	ATACTATGCA	150
GAGTCCGTGA	AGGGCCGATT	CACCATCTCC	AGAGACAATT	CCAAGAACAC	200
GCTGTATCTG	CAAATGAACA	GCCTGAGAGC	CGAGGACACG	GCTGTATATT	250
ACTGTGCGAG	AGATCAGGGC	ACTGGCTGGT	ACGGAGGCTT	TGACTTCTGG	300
GGCCAGGGAA	CCCTGGTCAC	CGTCTCCTCA	GCCTCCACCA	AGGGCCCATC	350
GGTCTTCCCC	CTGGCGCCCT	GCTCCAGGAG	CACCTCCGAG	AGCACAGCGG	400
CCCTGGGCTG	CCTGGTCAAG	GACTACTTCC	CCGAACCGGT	GACGGTGTCTG	450
TGGAACCTCAG	GCGCTCTGAC	CAGCGGCGTG	CACACCTTCC		490

(SEQ ID NO:39)

12.9.1.1 Heavy Chain Protein

VQPGRSLRLS	CAASGFTFSN	YAMHWVRQAP	GKGLEWVVVI	WHDGNNKYIA	50
ESVKGRFTIS	RDNSKNTLYL	QMNSLRAEDT	AVYYCARDQG	TGWYGGFDFW	100
GQGLTVTVSS	ASTKGPSVFP	LAPCSRSTSE	STAALGCLVK	DYFPEPVTVS	150
WNSGALTSGV	HTF				163

(SEQ ID NO:13)

12.9.1.1 Kappa Chain DNA

CCTGGAGAGC	CGGCTTCCAT	CTCTTGACAG	TCTAGTCAGA	GCCTCCTGCA	50
TAGTAATGGA	TACAACTATT	TGGATTGGTA	CCTGCAGAAG	CCAGGACAGT	100
CTCCACAGCT	CCTGATCTAT	TTGGGTTCTA	ATCGGGCCTC	CGGGGTCCCT	150
GACAGGTTCA	GTGGCAGTGG	ATCAGGCACA	GATTTTACAC	TGAAACTCAG	200
CAGAGTGGAG	GCTGAGGATG	TTGGGGTTTA	TTACTGCATG	CAAGCTCTAC	250
AAACTCCTCT	CACTTTCGGC	GGAGGGACCA	AGGTGGAGAT	CAAACGAACT	300
GTGGCTGCAC	CATCTGTCTT	CATCTTCCCG	CCATCTGATG	AGCAGTTGAA	350
ATCTGGAAC	GCCTCTGTTG	TGTGCCTGCT	GAATAACTTC	TATCCCAGAR	400
AGGCCAAAGT	ACATTCCAT				419

(SEQ ID NO:52)

12.9.1.1 Kappa Chain Protein

PGEPASISCR	SSQSLLHSNG	YNYLDWYLQK	PGQSPQLLIY	LGSNRASGVP	50
DRFSGSGSGT	DFTLKLRSVE	AEDVGVIYCM	QALQTPLEFG	GGTKVEIKRT	100
VAAPSVFIFP	PSDEQLKSGT	ASVVCLLNNF	YPR		133

(SEQ ID NO:26)

Figure 2A

CDR	DP5 0	3.1.1	4.1.1	4.8.1	4.10. 2	4.13. 1	4.14. 3	6.1.1	11.2. 1	11.6. 1	11.7. 1	12.3. 1.1	12.9. 1.1
								G					
	G	G	G	G	G			G	G	G		G	
	V	V	V	V	V			V	V	V	V	V	
	V	V	V	V	V			V	V	V	V	V	V
	Q	Q	Q	Q	Q			E	Q	Q	Q	Q	Q
	P	P	P	P	P	P	P	P	P	P	P	P	P
	G	G	G	G	G	G	G	G	G	G	G	G	G
	R	R	R	R	R	R	R	R	R	R	R	R	R
	S	S	S	S	S	S	S	S	S	S	S	S	S
	L	L	L	L	L	L	L	L	L	L	L	L	L
	R	R	R	R	R	R	R	R	R	R	R	R	R
	L	L	L	L	L	L	L	L	L	L	L	L	L
	S	S	S	S	S	S	S	S	S	S	S	S	S
	C	C	C	C	C	C	C	C	C	C	C	C	C
	A	A	V	T	V	A	A	T	A	A	A	A	A
	A	A	A	A	A	A	A	A	A	A	A	A	A
	S	S	S	S	S	S	S	S	S	S	S	S	S
	G	G	G	G	G	G	G	G	G	G	G	G	G
	F	F	F	F	F	F	F	F	F	F	F	F	F
	T	T	T	T	I	T	T	T	T	T	T	T	T
	F	F	F	F	F	F	F	F	F	F	F	F	F
CDR1	S	S	S	S	S	S	S	S	S	S	S	S	S
	S	S	S	N	S	S	S	S	S	S	S	S	N
	Y	Y	H	Y	H	H	H	Y	Y	Y	C	Y	Y
	G	G	G	G	G	G	G	G	G	G	G	G	A
	M	M	M	M	I	I	I	M	M	M	M	V	M
	H	H	H	H	H	H	H	H	H	H	H	H	H
	W	W	W	W	W	W	W	W	W	W	W	W	W
	V	V	V	V	V	V	V	V	V	V	V	V	V
	R	R	R	R	R	R	R	R	R	R	R	R	R
	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
	A	A	A	A	A	A	A	A	A	A	A	A	A
	P	P	P	P	P	P	P	P	P	P	P	P	P
	G	G	G	G	G	G	G	G	G	G	G	G	G
	K	K	K	K	K	K	K	K	K	K	K	K	K
	G	G	G	G	G	G	G	G	G	G	G	G	G
	L	L	L	L	L	L	L	L	L	L	L	L	L
	E	E	E	E	E	E	E	E	E	E	E	E	E
	W	W	W	W	W	W	W	W	W	W	W	W	W
	V	V	V	V	V	V	V	V	V	V	V	V	V
	A	A	A	A	A	A	A	A	A	A	A	A	V
	V	V	V	V	V	V	V	V	V	V	V	V	V
	I	I	I	I	I	I	I	I	I	I	I	I	I
	W	W	W	W	W	W	W	W	W	W	W	W	W
	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	S	Y	H
	D	D	D	D	D	D	D	D	D	D	D	D	D
	G	G	G	G	G	G	G	G	G	G	G	G	G
CDR2	S	S	R	S	R	R	R	S	S	S	S	S	N

Figure 2B

CDR	DP5 0	3.1.1	4.1.1	4.8.1	4.10. 2	4.13. 1	4.14. 3	6.1.1	11.2. 1	11.6. 1	11.7. 1	12.3. 1.1	12.9. 1.1
	N	N	N	N	N	N	N	N	N	H	H	N	N
	K	K	K	K	K	K	K	K	K	K	K	K	K
	Y	Y	Y	H	D	D	D	H	Y	Y	Y	Y	Y
	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	A	A	A	G	A	A	A	A	A	A	A	A	A
	D	D	D	D	D	D	D	D	D	D	D	D	E
	S	S	S	S	S	S	S	S	S	S	S	S	S
	V	V	V	V	V	V	V	A	V	V	V	V	V
	K	K	K	K	K	K	K	K	K	K	K	K	K
	G	G	G	G	G	G	G	G	G	G	G	G	G
	R	R	R	R	R	R	R	R	R	R	R	R	R
	F	F	F	F	F	F	F	F	F	F	F	F	F
	T	T	T	T	T	T	T	T	T	T	T	T	T
	I	I	I	I	I	I	I	I	I	I	I	I	I
	S	S	S	S	S	S	S	S	S	S	S	S	S
	R	R	R	S	R	R	R	R	R	R	R	R	R
	D	D	D	D	D	D	D	D	D	D	D	D	D
	N	N	N	N	N	N	N	N	N	N	N	N	N
	S	S	S	S	S	S	S	S	S	S	S	S	S
	K	K	K	K	K	K	K	K	K	K	K	K	K
	N	N	N	N	N	N	K	N	N	N	N	S	N
	T	T	T	T	T	T	T	T	T	T	T	T	T
	L	L	L	L	L	L	L	L	L	L	L	L	L
	Y	Y	F	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	L	L	L	L	L	L	L	L	L	L	L	L	L
	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
	M	M	M	M	M	M	M	M	M	M	M	M	M
	N	N	N	N	N	N	N	N	N	N	N	N	N
	S	S	S	S	S	S	S	S	S	S	S	S	S
	L	L	L	L	L	L	L	L	L	L	L	L	L
	R	R	R	R	R	R	R	R	R	R	R	R	R
	A	A	A	A	A	A	A	A	A	A	A	A	A
	E	E	E	E	E	E	E	E	E	E	E	E	E
	D	D	D	D	D	D	D	D	D	D	D	D	D
	T	T	T	T	T	T	T	T	T	T	T	T	T
	A	A	A	A	A	A	A	A	A	A	A	A	A
	V	V	V	V	V	V	V	V	V	V	V	V	V
	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	C	C	C	C	C	C	C	C	C	C	C	C	C
	A	A	A	A	A	A	A	A	A	A	A	A	A
	R	R	R	R	R	R	R	R	R	R	R	R	R
		G	G	G	V	V	V	A	D	G	G	D	D
		A	G	E	A	A	A	G	P	A	T	S	Q
		R	H	R	P	P	P	L	R	V	M	Y	G
		I	F	L	L	L	L	L	G	V	I	Y	T
CDR3		I	G	G	G	G	G	G	A	V	V	D	G

Figure 2C

CDR	DP5 0	3.1.1	4.1.1	4.8.1	4.10. 2	4.13. 1	4.14. 3	6.1.1	11.2. 1	11.6. 1	11.7. 1	12.3. 1.1	12.9. 1.1
		T	P	S	P	P	P	Y	T	P	V	F	W
		P	F	Y	L	L	L	F	L	A	G	W	Y
		C	D	F	D	D	D	D	Y	A	T	S	G
		M	Y	D	Y	Y	Y	Y	Y	M	L	G	G
		D	W	Y	W	W	W	W	Y	D	D	R	F
		V	G	W	G	G	G	G	Y	V	Y	G	D
		W	Q	G	Q	Q	Q	Q	Y	W	W	G	F
		G	G	Q	G	G	G	G	G	G	G	M	W
		Q	T	G	T	T	T	T	M	Q	Q	D	G
		G	L	T	L	L	L	L	D	G	G	V	Q
		T	V	L	V	V	V	V	V	T	T	W	G
		T	T	V	T	T	T	T	W	T	L	G	T
		V	V	T	V	V	V	V	G	V	V	Q	L
		T	S	V	S	S	S	S	Q	T	T	G	V
		V	S	S	S	S	S	S	G	V	V	T	T
		S	A	S	A	A	A	A	T	S	S	T	V
		S	S	A	S	S	S	S	T	S	S	V	S
		A	T	S	T	T	T	T	V	A	A	T	S
		S	K	T	K	K	K	K	T	S	S	V	A
		T	G	K	G	G	G	G	V	T	T	S	S
		K	P	G	P	P	P	P	S	K	K	S	T
		G	S	P	S	S	S	S	S	G	G	A	K
		P	V	S	V	V	V	V	A	P	P	S	G
		S	F	V	F	F	F	F	S	S	S	T	P
		V	P	F	P	P	P	P	T	V	V	K	S
		F	L	P	L	L	L	L	K	F	F	G	V
		P	A	L	A	A	A	A	G	P	P	P	F
		L	P	A	P	P	P	P	P	L	L	S	P
		A	C	P	C	C	C	C	S	A	A	V	L
		P	S	C	S	S	S	S	V	P	P	F	A
		C	R	S	R	R	R	R	F	C	C	P	P
		S	S	R	S	S	S	S	P	S	S	L	C
		R	T	S	T	T	T	T	L	R	R	A	S
		S	S	T	S	S	S	S	A	S	S	P	R
		T	E	S	E	E	E	E	P	T	T	C	S
		S	S	E	S	S	S	S	C	S	S	S	T
		E	T	S	T	T	T	T	S	E	E	R	S
		S	A	T	A	A	A	A	R	S	S	S	E
		T	A	A	A	A	A	A	S	T	T	T	S
		A	L	A	L	L	L	L	T	A	A	S	T
		A	G	L	G	G	G	G	S	A	A	E	A
		L	C	G	C	C	C	C	E	L	L	S	A
		G	L	C	L	L	L	L	S	G	G	T	L
		C	V	L	V	V	V		T	C	C	A	G
		L	K	V	K	K	K		A	L	L	A	C
		V	D	K	D	D	D		A	V	V	L	L
		K	Y	D	Y	Y	Y		L	K	K	G	V
		D	F	Y	F	F	F		G	D	D	C	K
		Y	P	F	P	P	P		C	Y	Y	L	D

Figure 2D

[illegible]

Figure 3

DP-65 or 4-31 gene product

VSGGSISSGGYYWSWTRQHPGKGLEWIGYIYYSGSTYYNPSLKSRVTISVDTSKNQFSCLKSSVTAADTAVYYCAR
 CDR1 CDR2

2.1.3 Heavy Chain Protein

SGPGLVKPSQILSLTCTVSGGSISGGHYWSWTRQHPGKLEWIGYIYYIGNTYNPSLKSRVTISVDTSKNQFSCLKSSVTAADTAVYYCAR
 CDR1 CDR2
 DSGDYYGIDVWGQGTTVTVSSASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQ
 CDR3

Figure 4

A27 Gene Product

EIVLTQSPGTLSPGERATLSCRASQSVSSSYLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQOYGSPP
 CDR1 CDR2 CDR3

4.1.1 Kappa Chain Protein

QSPGTLSPGERATLSCRASQSISSFLAWYQQRPQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQOYGTSPWT
 CDR1 CDR2 CDR3
 FGQGTKVEIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAK

4.8.1 Kappa Chain Protein

QSPGTLSPGERATLSCRITSMVSSSYLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQOYGISPFI
 CDR1 CDR2 CDR3
 FGGGTKVEIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQ

4.14.3 Kappa Chain Protein

GTLSPGERATLSCRASQSVSSSYLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQOYGRSPFI
 CDR1 CDR2 CDR3
 FGPGTKVDIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQ

6.1.1 Kappa Chain Protein

QSPGTLSPGERATLSCRASQSVSSSYLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQOYGISPFI
 CDR1 CDR2 CDR3
 FGPGTKVDIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQ

4.10.2 Kappa Chain Protein

SPGTLSPGERATLSCRASQSISSNFLAWYQQKPGQAPRLIYRPSSRATGIPDSFSGSGGTDFLTISRLEPEDFALYYCQOYGTSPFI
 CDR1 CDR2 CDR3
 FGPGTKVDIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQ

4.13.1 Kappa Chain Protein

QSPGTLSPGERATLSCRASQSVSSSYLAWYQQKPGQAPRLIYGASSRATGIPDRFSGSGGTDFLTISRLEPEDFAVYYCQOYGRSPFI
 CDR1 CDR2 CDR3
 FGPGTKVDIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKGG

Figure 5

012 Gene Product

DIQMTQSPSSLSASVGDRVTITCRASQSISSYLNWYQQKPGKAPKLLIYAASSLQSGVPSRFRSGSGTDFTLTISSLQPEDFATYYCQQQSYSTP
 CDR1 CDR2 CDR3

3.1.1 Kappa Chain Protein

QSPSSLSASVGDRVTITCRASQSNITYLWYQQKPGKAPNFLISATSILOSQGVPSRFRSGSGTNFTLTINSLHPEDFATYYCQQQSYSTP
 CDR1 CDR2 CDR3

FGPGTKVDIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSG

11.2.1 Kappa Chain Protein

PSSLSASVGDRVTITCRASQSNISYLDWYQQKPGKAPKLLIYAASSLQSGVPSRFRSGSGTDFTLTISSLQPEDFATYYCQQQYXSTP
 CDR1 CDR2 CDR3

FGPGTKVEIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKV

11.6.1 Kappa Chain Protein

TQSPSSLSASVGDRVTITCRASONISRYLNWYQQKPGKAPKFLIYVASILOSGVPSGFSASGSGPDFLTISSLQPEDFATYYCQQQSYSTP
 CDR1 CDR2 CDR3

FGPGTKVDIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLNN

11.7.1 Kappa Chain Protein

TQSPSSLSASVGDRVTITCRASQSIENYLNWYQQKPGKAPRVLIYAASSLQGGVPSRFRSGSGIDCTLTISSLQPEDFATYYCQQQYITP
 CDR1 CDR2 CDR3

FGPGTRVDIERTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNAY

Figure 6

A10/A26 Gene Product

ENVLTQSPDFQSVTPKEKVTITCRASQSIGSSLHWYQQKPDQSPKLLIKYASQSESGVPSRFSGSGGTDFTLTINSLEAEDAATYYCHQSSSLPQ
CDR1 CDR2 CDR3

2.1.3 Kappa Chain Protein

SPDFQSVTPKEKVTITCRASQSIGSSLHWYQQKPDQSPKLLIKYASQSESGVPSRFSGSGGTDFTLTINSLEAEDAATYYCHQSSSLPLT
CDR1 CDR2 CDR3
FGGGTKVEIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQE

Figure 7

A17 Gene Product

DVVM~~MTQSP~~SLPVTLGQ~~PASISCRSSQSLVYSDGNTYLNWFQRP~~Q~~QSPRRLIYKVSNRDSGV~~PDRFSGSGGTDFTLKISRVEAEDVGVYYCMQ~~GTHWP~~
CDR1 CDR2 CDR3

12.3.1 Kappa Chain Protein

PLSLPVTLGQ~~PASISCRSSQSLVYSDGNTYLNWFQRP~~Q~~QSPRRLIYKVSNRWDSGV~~PDRFSGSGGTDFTLKISRVEAEDVGVYYCMQ~~GSHWPP~~
CDR1 CDR2 CDR3
FGQGTKVEIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYP

Figure 8

A3/A19 Gene Product

DIVMTQSPISLPVTPGEPASISCRSSQSLHSNGYNLYLDWYLQKPGQSPQLLIYLGSNRASGVDPDRFSGSGGTIDFTLKISRVEAEDVGVYYCMQALQITP
CDR1 CDR2 CDR3

12.2.1 Kappa Chain Protein

PGEPASISCRSSQSLHSNGYNLYLDWYLQKPGQSPQLLIYLGSNRASGVDPDRFSGSGGTIDFTLKISRVEAEDVGVYYCMQALQITLT
CDR1 CDR2 CDR3
FGGGTIKVEIKRTVAAPSVFIFPPSDEQLKSGTASVVCIINNNFYPR

Figure 9 Amino-terminal amino acid sequence analysis

Hybridoma	Light chain	MW
CT2.1.3	ND	ND
CT3.1.1	NH ₂ -DIQMTQSPSSLSASVGDRVT	26,119
CT4.1.1	NH ₂ -EIVLTQSPGTLSPGERAT	23,917
CT4.8.1	NH ₂ -EIVLTQSPGTLSPGERAT	23,617
CT4.9.1	NH ₂ -DIQMTQSPSSVSASVGDRVT	23,702
CT4.10.2	NH ₂ -TGEFVLTQSPGTLSPGER (60%) NH ₂ -EFVLTQSPGTLSPGERAT (40%)	24,101
CT4.14.3	NH ₂ -EIVLTQSPGTLSPGERAT	23,770
CT4.13.1	NH ₂ -EIVLTQSPGTLSPGERAT	23,802
CT6.1.1	NH ₂ -EIVLTQSPGTLSPGERAT	23,747

Hybridoma	Heavy chain	MW
CT2.1.3	ND	ND
CT3.1.1	NH ₂ -Blocked. Following treatment with Pyroglutamate Aminopeptidase: NH ₂ -pQ-VQLVESGGGVVQPGRSLRLS (major sequence~80%) NH ₂ -PEVQF...(minor sequence~20%)	51,813
CT4.1.1	NH ₂ -Blocked. Following treatment with Pyroglutamate Aminopeptidase: NH ₂ -pQ-VQLVESGGGVVQPGRSLRLS (major sequence~65%) NH ₂ -PEVQFNWYVD...(minor sequence~35%)	51,502
CT4.8.1	NH ₂ -Blocked. Following treatment with Pyroglutamate Aminopeptidase: NH ₂ -pQ-VQLVESGGGVVQPG(R)SL... (major sequence~60%) NH ₂ -PEVQFNWY...(minor sequence~40%)	51,597
CT4.9.1	NH ₂ -EVQLLESGGGLVQPGGSLRL (free amino terminus)	51,437
CT4.10.2	NH ₂ -Blocked. Following treatment with Pyroglutamate Aminopeptidase: NH ₂ -pQ-VQLVESGGGVVQPGRSLRLS (major sequence~60%) NH ₂ -PEVQFNWYVD...(minor sequence~40%)	51,502
CT4.14.3	NH ₂ -Blocked. Following treatment with Pyroglutamate Aminopeptidase: NH ₂ -pQ-VQLVESGGGVVQPGRSL(R)(L)(S) (major sequence~65%) NH ₂ -PEVQFNWYV...(minor sequence~35%)	51,293
CT4.13.1	NH ₂ -Blocked. Following treatment with Pyroglutamate Aminopeptidase: NH ₂ -pQ-VQLVESGGGVVQPGRSLRLS (major sequence~75%) NH ₂ -PEVQFN...(minor sequence~25%)	51,305
CT6.1.1	NH ₂ -Blocked. Following treatment with Pyroglutamate Aminopeptidase: NH ₂ -pQ-VQLVESGGGVVEPGRSLRLS* (major sequence~65%) NH ₂ -PEVQFNWYVD... (minor sequence~35%)	51,476

* This heavy chain sequence is similar to the other blocked heavy chain sequences except for a unique Gln->Glu change at position 13.

Figure 10A

antibody	Conc. (mg/ml) (Ec1.58)		IEF	SDS-PAGE		SEC	reported MALDI		n-term. seq. (lc)*	
	reported	observed		(+) b-me	(-) b-me		Hc	Lc	reported	observed
CT 3.1.1	1.1	1.57	smear	50 & 28 kDa	6 bands	139,400	51,813	26,119	DIQMTQSP (SEQ ID NO: 141)	DIQMTQSP (SEQ ID NO: 141)
CT 4.1.1	1.54	1.65	smear	50 & 24 kDa	6 bands	79,900	51,502	23,917	EIVLTQSP (SEQ ID NO: 142)	EIVLTQSP (SEQ ID NO: 142)
CT 4.8.1	1.52	1.54	4 bands	50 & 24 kDa	6 bands	110,300	51,597	23,617	EIVLTQSP (SEQ ID NO: 143)	EIVLTQSP (SEQ ID NO: 143)
CT 4.10.2	1.29	1.77	4 bands	50 & 25 kDa	6 bands	107,200	51,502	24,101	**	***
CT 4.14.3	1.75	1.65	smear	50 & 24 kDa	6 bands	82,800	51,293	23,770	EIVLTQSP (SEQ ID NO: 146)	EIVLTQSP (SEQ ID NO: 146)
CT 6.1.1	1.36	1.3	4 bands	50 & 24 kDa	6 bands	101,100	51,476	23,747	EIVLTQSP (SEQ ID NO: 147)	EIVLTQSP (SEQ ID NO: 147)
* all heavy chains n-terminally blocked (not sequenced in-house)										
** mixed sequence reported: TGEFVLTQSP (60) (SEQ ID NO: 144) & EFVLTQSP (40) (SEQ ID NO: 145)										
*** mixed sequence observed TGEFVLTQSP (60) (SEQ ID NO: 144) & EFVLTQSP (40) (SEQ ID NO: 145)										

IOD_{280nm} = 0.633 mg/ml
Ec-1.58

Figure 10B

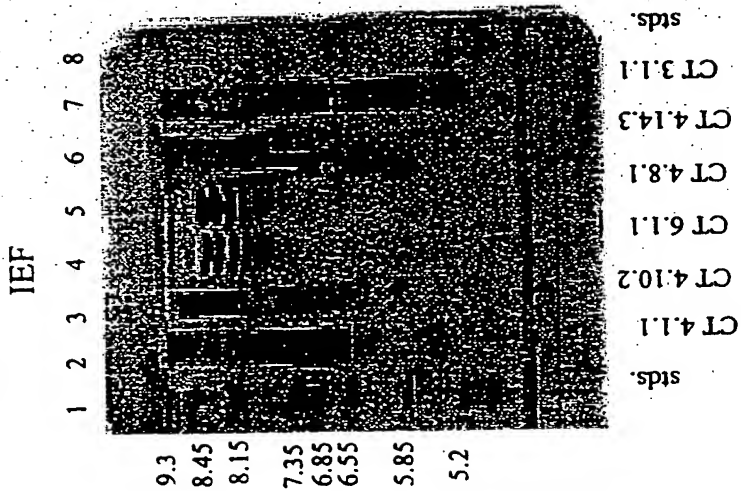


Figure 10C

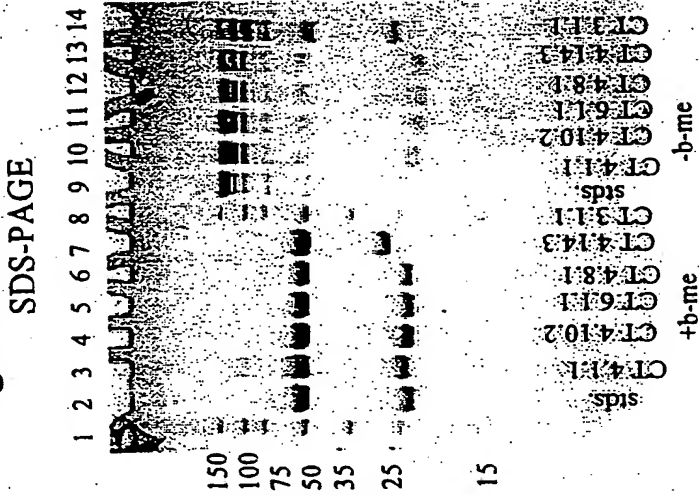


Figure 10D

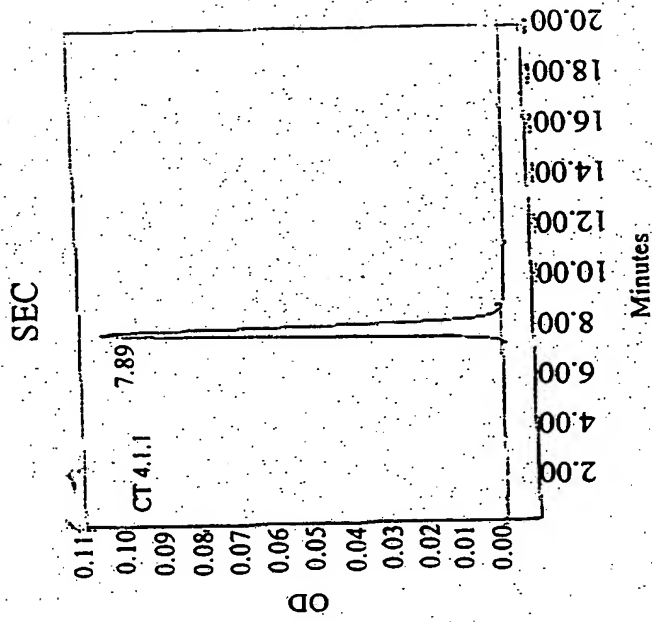
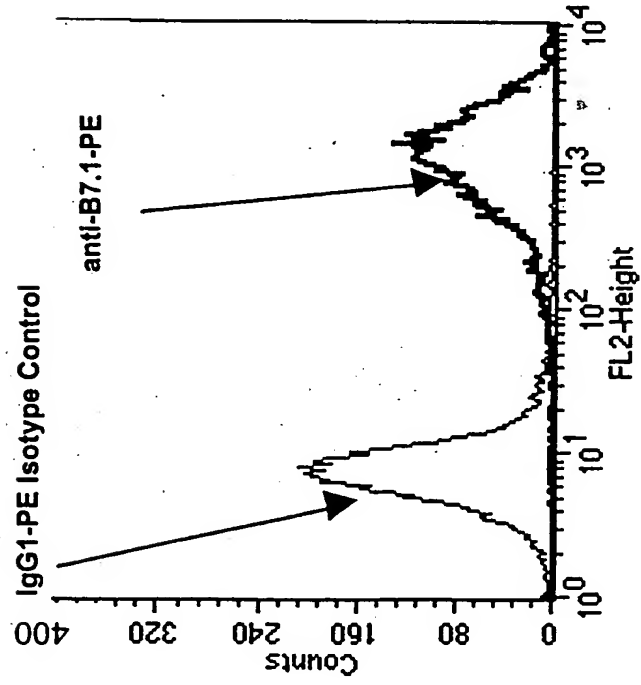


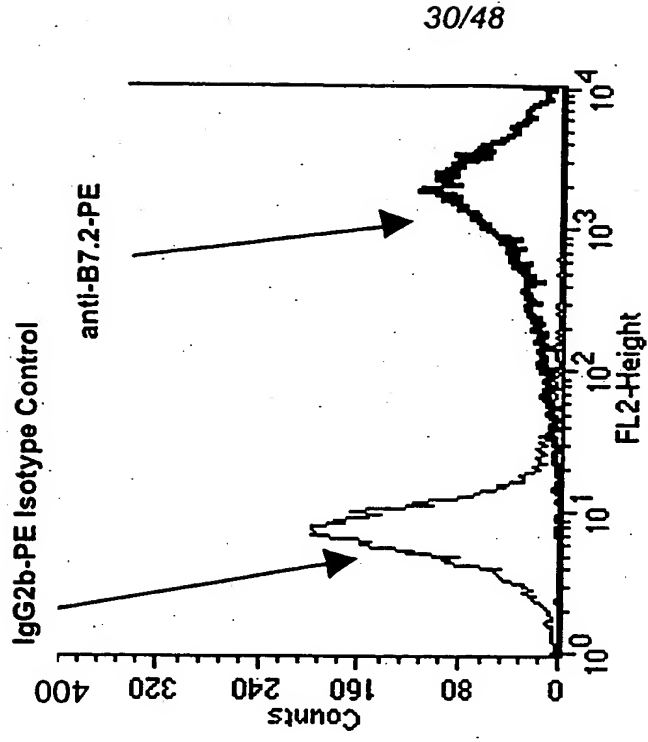
Figure 11A



99.7% B7.1 pos.

Expression of B7.1 and B7.2 on Raji Cells

Figure 11B



99.7% B7.2 pos.

Figure 12

**Enhancement of Human T Cell IL-2 Production
Induced by Anti-CTLA4 XenoMouse MAbs in
the 72 Hour T Blast / Raji Assay**

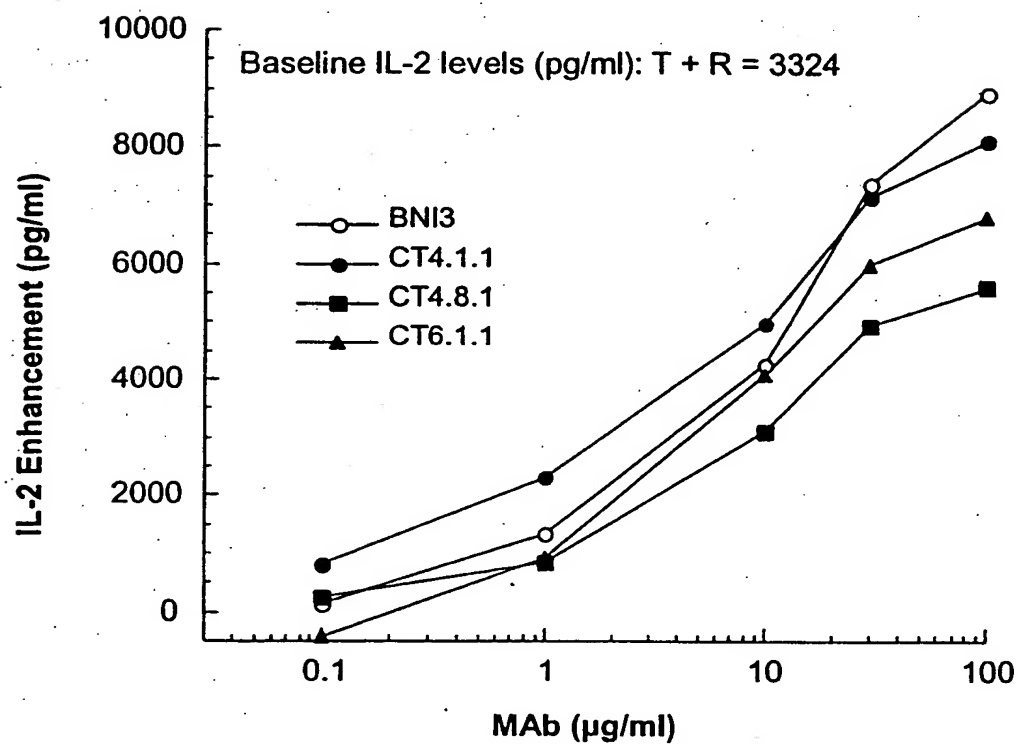


Figure 13

**Enhancement of Human T Cell IFN- γ Production
Induced by Anti-CTLA4 XenoMouse MAbs in
the 72 Hour T Blast / Raji Assay**

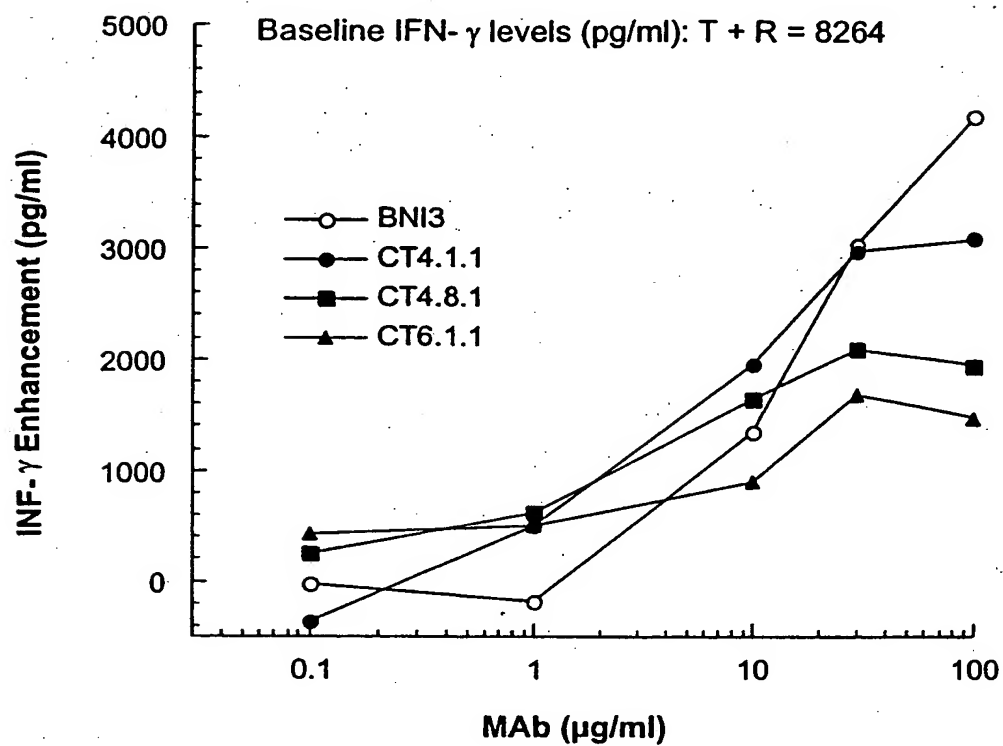


Figure 14**Enhancement of Human T Cell IL-2 Production
Induced by Anti-CTLA4 XenoMouse MAbs in
the 72 Hour T Blast / Raji Assay (6 Donors)**

Baseline IL-2 levels (pg/ml): T + R = 9187, T + R + IgG2a = 9389, T + R + IgG2 = 8509

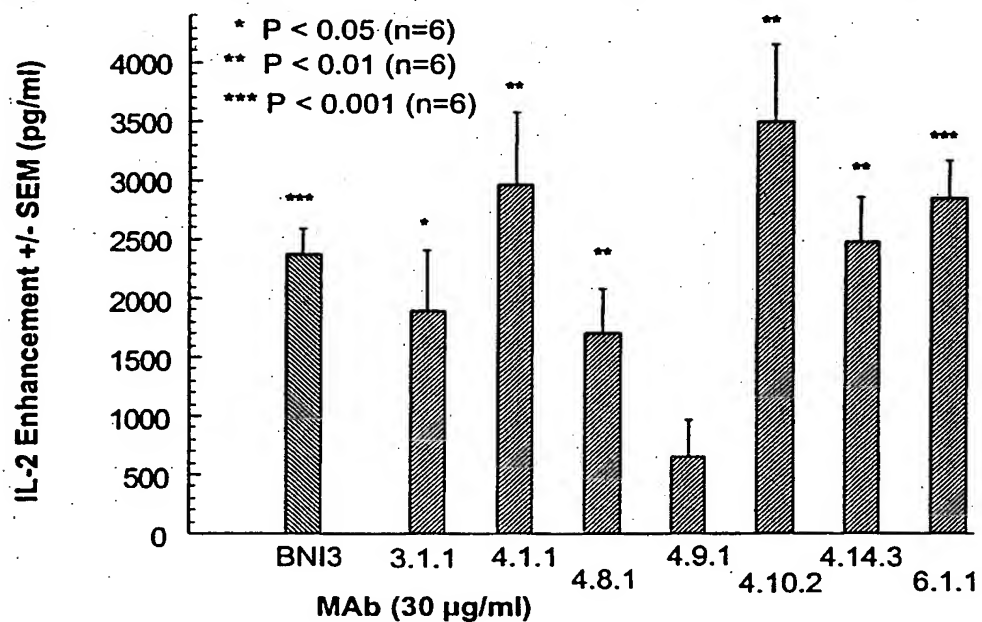


Figure 15

**Enhancement of Human T Cell IFN- γ Production
Induced by Anti-CTLA4 XenoMouse MAbs in
the 72 Hour T Blast / Raji Assay (6 Donors)**

Baseline IFN- γ levels (pg/ml): T + R = 4780, T + R + IgG2a = 4868, T + R + IgG2 = 4331

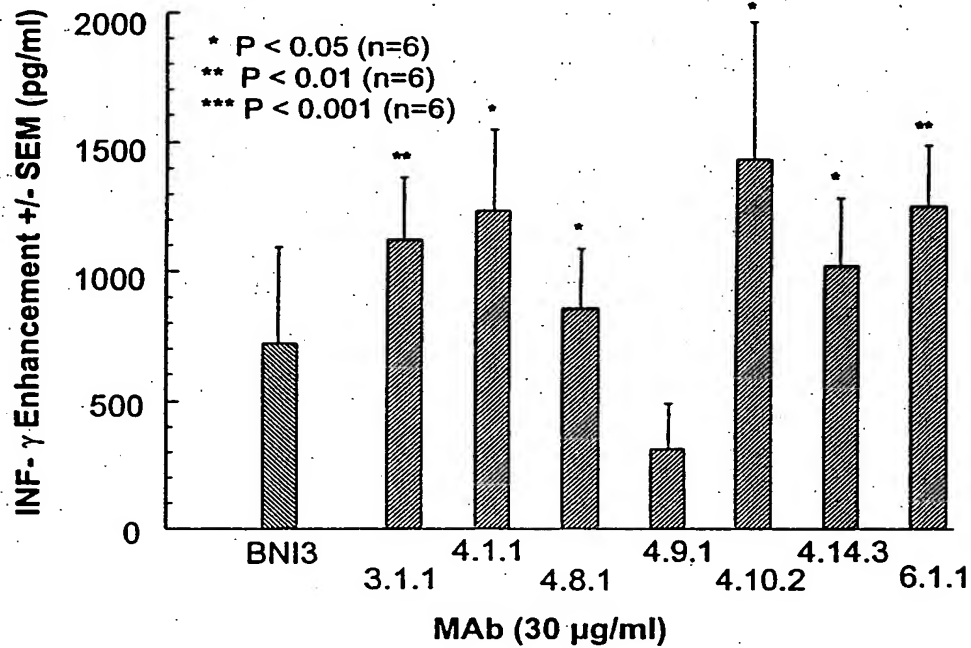


Figure 16

Enhancement of IL-2 Production Induced by Anti-CTLA4 MAb CT4.1.1 (30 μ g/ml) Binding to Human PBMC Stimulated with SEA (100 ng/ml) Plus Anti-CD3 MAb (60 ng/ml)

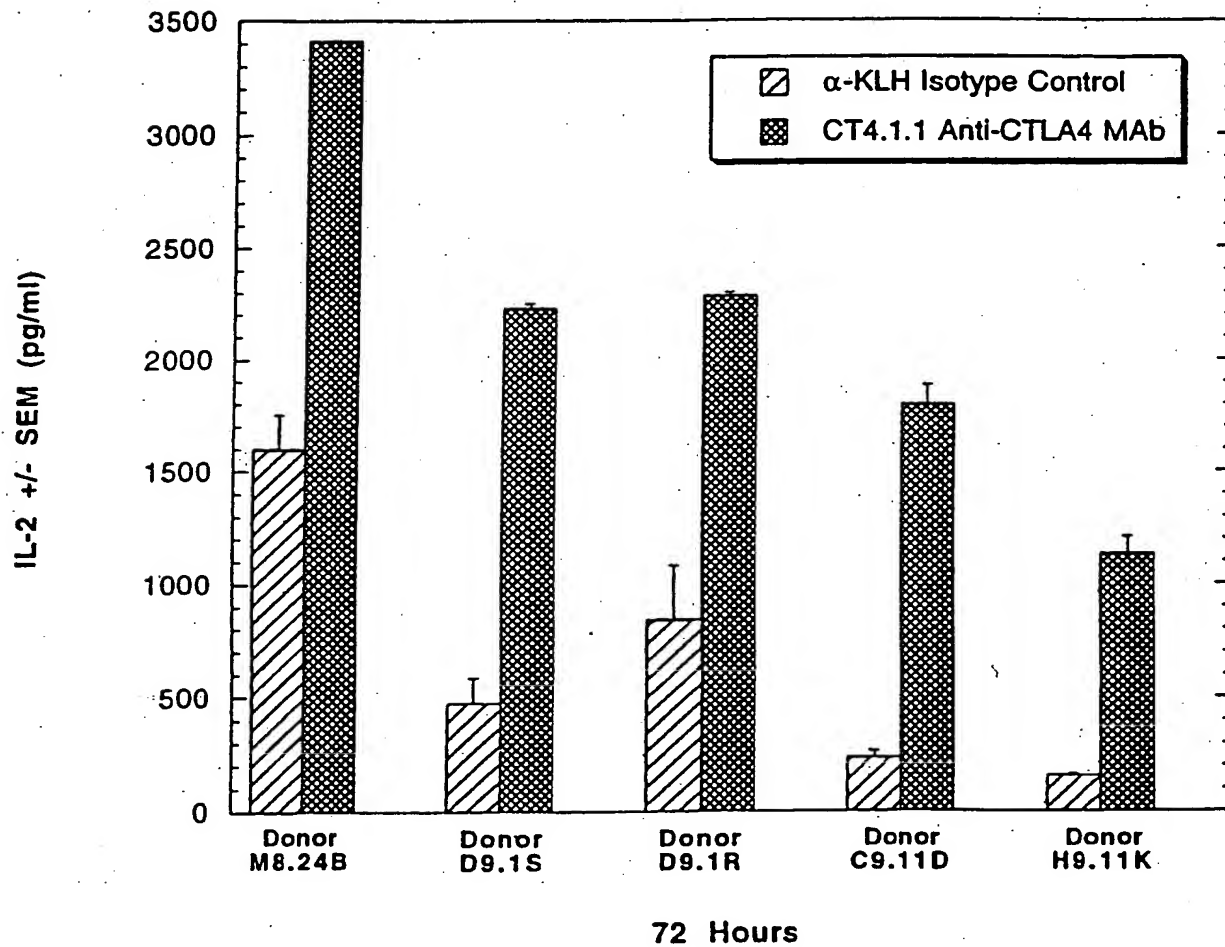


Figure 17

**Enhancement of IL-2 Production Induced by Anti-CTLA4 MAbs
(30 μ g/ml) in Human Whole Blood Stimulated with SEA
(100 ng/ml) Plus Anti-CD3 MAb (60 ng/ml)**

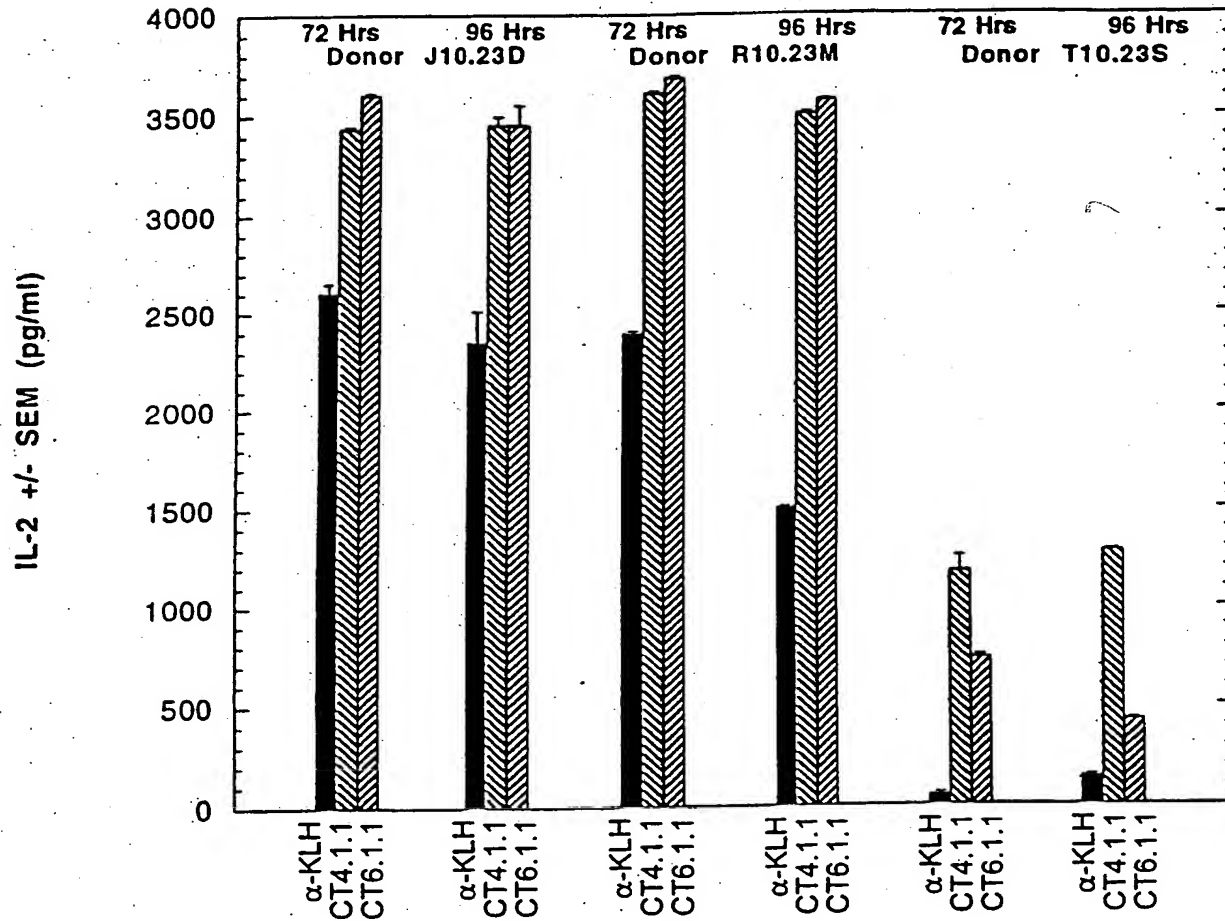
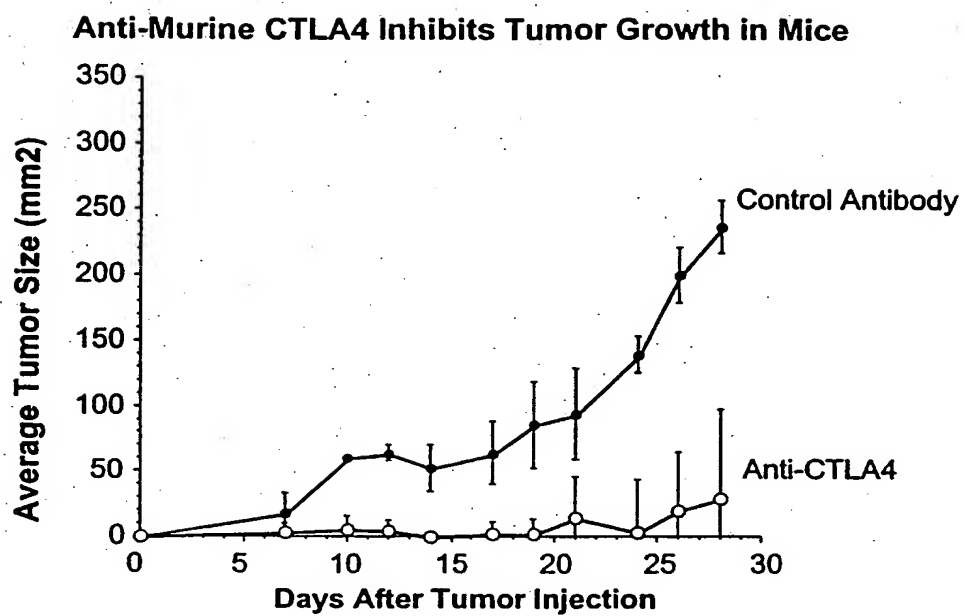


Figure 18

Treatment was administered on day
0,4,7,and 14 after tumor challenge

Figure 19

**Enhancement of IL-2 Production Induced by Anti-CTLA4 MAbs
(30 μ g/ml) in the 72 Hour T Blast / Raji and
Superantigen Assays (6 Donors)**

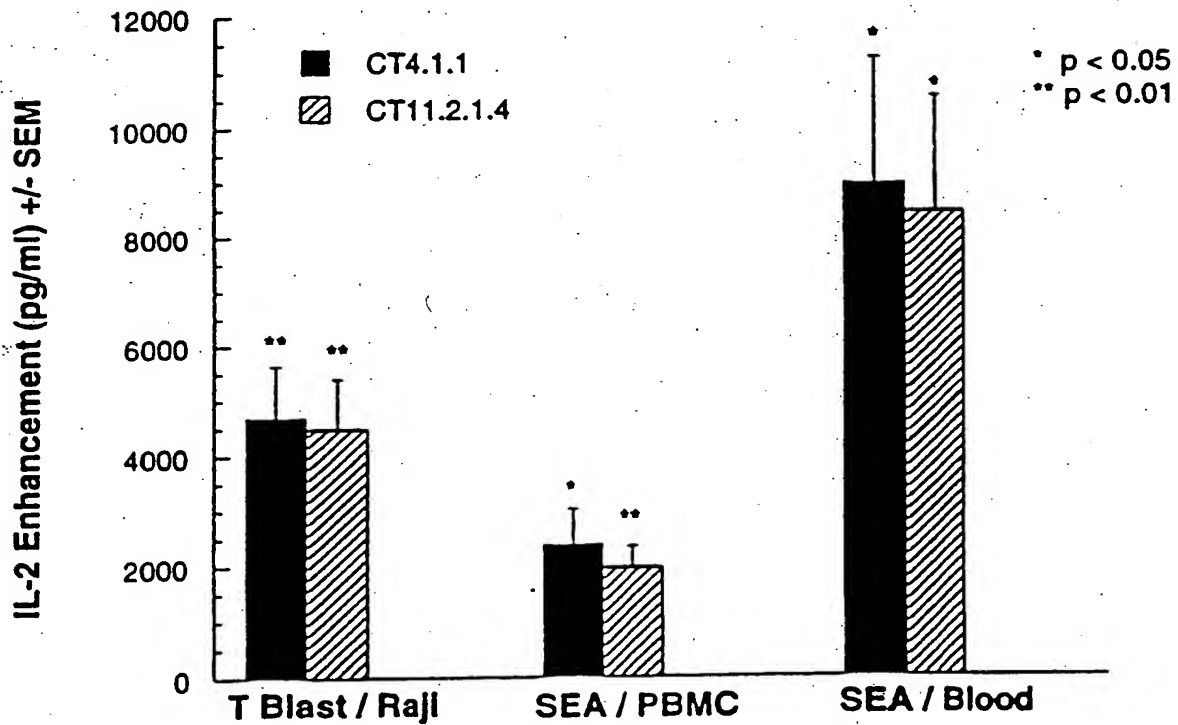


Figure 20

**Enhancement of Human T Cell IL-2 Production
Induced by Anti-CTLA4 MAbs in
the 72 Hour T Blast / Raji Assay**

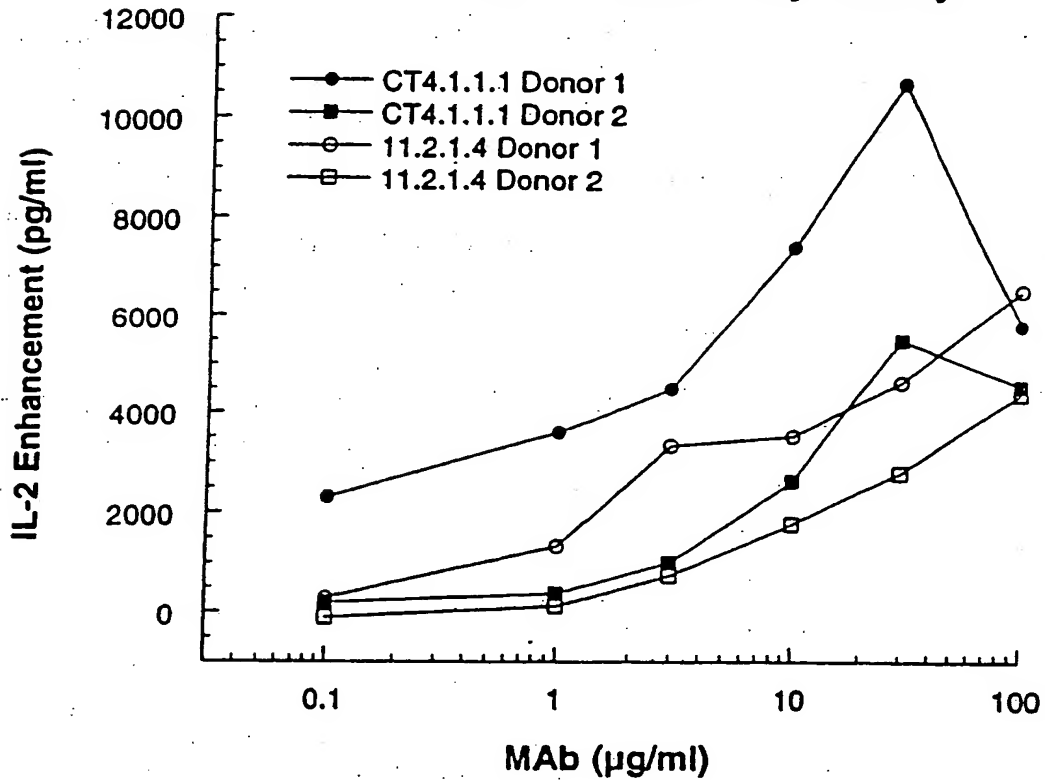
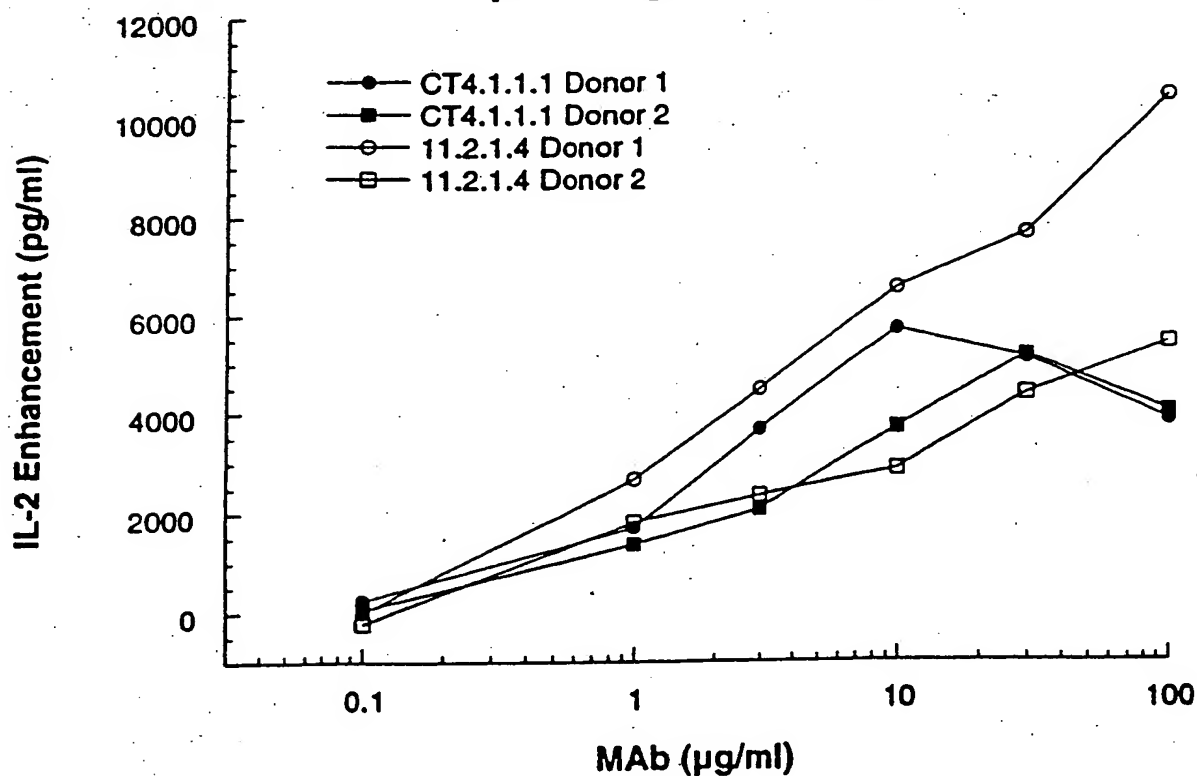


Figure 21

**Enhancement of IL-2 Production Induced by Anti-CTLA4
MAbs in Whole Blood Stimulated with
Superantigen (100 ng/ml)**



- Signal peptides shown in bold and large text
- Open reading frame for genomic clone underlined
- Mutations introduced to make deglycosylated Ab (N294Q) double underlined and large text

Figure 22A 4.1.1 IgG2 Heavy Chain cDNA

ATGGAGTTTGGGCTGAGCTGGGTTTTCTCTCGTTGCTCTTTTAAGA
GGTGTCCAGTGTCAGGTGCAGCTGGTGGAGTCTGGGGGAGGCGTGGTCCAG
CCTGGGAGGTCCCTGAGACTCTCCTGTGTAGCGTCTGGATTACCTTCAGTAG
CCATGGCATGCACTGGGTCCGCCAGGCTCCAGGCAAGGGGCTGGAGTGGGTGG
CAGTTATATGGTATGATGGAAGAAATAAATACTATGCAGACTCCGTGAAGGGC
CGATTACACATCTCCAGAGACAATTCCAAGAACACGCTGTTTCTGCAAATGAA
CAGCCTGAGAGCCGAGGACACGGCTGTGTATTACTGTGCGAGAGGAGTCACT
TCGGTCTTTTTGACTACTGGGGCCAGGGAACCTGGTCACCGTCTCCTCAGCC
TCCACCAAGGGCCCATCGGTCTTCCCCCTGGCGCCCTGCTCCAGGAGCACCTC
CGAGAGCACAGCGGCCCTGGGCTGCCTGGTCAAGGACTACTTCCCCGAACCGG
TGACGGTGTCTGGAACCTCAGGCGCTCTGACCAGCGGCGTGCACACCTTCCCA
GCTGTCTTACAGTCCTCAGGACTCTACTCCCTCAGCAGCGTGGTGACCGTGCC
CTCCAGCAACTTCGGCACCCAGACCTACACCTGCAACGTAGATCACAAGCCCA
GCAACACCAAGGTGGACAAGACAGTTGAGCGCAAATGTTGTGTGCGAGTGCCCA
CCGTGCCCAGCACCACTGTGGCAGGACCGTCAGTCTTCCTCTTCCCCCCAAA
ACCCAAGGACACCCTCATGATCTCCCGGACCCCTGAGGTACAGTGCGTGGTGG
TGGACGTGAGCCACGAAGACCCCGAGGTCCAGTTCAACTGGTACGTGGACGGC
GTGGAGGTGCATAATGCCAAGACAAAGCCACGGGAGGAGCAGTTCAACAGCAC
GTTCCGTGTGGTCAGCGTCCTCACCGTTGTGCACCAGGACTGGCTGAACGGCA
AGGAGTACAAGTGCAAGGTCTCCAACAAAGGCCTCCAGCCCCCATCGAGAAA
ACCATCTCCAAAACCAAAGGGCAGCCCCGAGAACCACAGGTGTACACCCTGCC
CCCATCCCGGGAGGAGATGACCAAGAACCAGGTCAGCCTGACCTGCCTGGTCA
AAGGCTTCTACCCAGCGACATCGCCGTGGAGTGGGAGAGCAATGGGCAGCCG
GAGAACAACACTACAAGACCACACCTCCCATGCTGGACTCCGACGGCTCCTTCTT
CCTCTACAGCAAGCTCACCGTGGACAAGAGCAGGTGGCAGCAGGGGAACGTCT
TCTCATGCTCCGTGATGCATGAGGCTCTGCACAACCACTACACGCAGAAGAGC
CTCTCCCTGTCTCCGGGTAAATGA (SEQ ID NO:53)

Figure 22B 4.1.1 IgG2 Heavy Chain Genomic DNA

ATGGAGTTTGGGCTGAGCTGGGTTTTCTCTCGTTGCTCTTTTAAGA
GGTGTCCAGTGTCAGGTGCAGCTGGTGGAGTCTGGGGGAGGCGTGGTCCAG
 CCTGGGAGGTCCCTGAGACTCTCCTGTGTAGCGTCTGGATTACCTTCAGTAG
 CCATGGCATGCACTGGGTCCGCCAGGCTCCAGGCAAGGGGCTGGAGTGGGTGG
 CAGTTATATGGTATGATGGAAGAAATAAATACTATGCAGACTCCGTGAAGGGC
 CGATTACCATCTCCAGAGACAATTCCAAGAACACGCTGTTTCTGCAAATGAA
 CAGCCTGAGAGCCGAGGACACGGCTGTGTATTACTGTGCGAGAGGAGGTCACT
 TCGGTCTTTTTGACTACTGGGGCCAGGGAACCTGGTCACCGTCTCCTCAGCT
 AGCACCAAGGGCCCATCGGTCTTCCCCCTGGCGCCCTGCTCCAGGAGCACCTC
 CGAGAGCACAGCGGCCCTGGGCTGCCTGGTCAAGGACTACTTCCCCGAACCGG
 TGACGGTGTCTGTGGAACCTCAGGCGCTCTGACCAGCGGCGTGCACACCTTCCCA
 GCTGTCTTACAGTCTCCTCAGGACTCTACTCCCTCAGCAGCGTGGTGACCGTGCC
 CTCCAGCAACTTCGGCACCCAGACCTACACCTGCAACGTAGATCACAAGCCCA
 GCAACACCAAGGTGGACAAGACAGTTGGTGAGAGGCCAGCTCAGGGAGGGAGG
 GTGTCTGCTGGAAGCCAGGCTCAGCCCTCCTGCCTGGACGCACCCCGGCTGTG
 CAGCCCCAGCCCAGGGCAGCAAGGCAGGCCCCATCTGTCTCCTCACCCGGAGG
 CCTCTGCCCCGCCCACTCATGCTCAGGGAGAGGGTCTTCTGGCTTTTTTCCACC
 AGGCTCCAGGCAGGCACAGGCTGGGTGCCCCCTACCCAGGCCCTTCACACACA
 GGGGCAGGTGCTTGGCTCAGACCTGCCAAAAGCCATATCCGGGAGGACCCTGC
 CCCTGACCTAAGCCGACCCCAAAGGCCAAACTGTCCACTCCCTCAGTCTGGAC
 ACCTTCTCTCCTCCAGATCCGAGTAACCTCCCAATCTTCTCTCTGACAGCGC
 AAATGTTGTGTCGAGTGCCCCACCGTGCCCAAGGTAAAGCCAGGCCCGCTCGCC
 CTCCAGCTCAAGGCGGGACAGGTGCCCTAGAGTAGCCTGCATCCAGGGACAGG
 CCCAGCTGGGTGCTGACACGTCCACCTCCATCTCTTCTCAGCACCACTGT
 GGCAGGACCGTCAGTCTTCTCTTCCCCCAAACCCAAGGACACCCTCATGA
 TCTCCCGGACCCCTGAGGTACGTGCGTGGTGGTGGACGTGAGCCACGAAGAC
 CCCGAGGTCCAGTTCAACTGGTACGTGGACGGCGTGGAGGTGCATAATGCCAA
 GACAAAGCCACGGGAGGAGCAGTTCAACAGCACGTTCCGTGTGGTCAGCGTCC
 TCACCGTTGTGCACCAGGACTGGCTGAACGGCAAGGAGTACAAGTGCAAGGTC
 TCCAACAAAGGCCTCCCAGCCCCCATCGAGAAAACCATCTCCAAAACCAAAGG
 TGGGACCCGCGGGGTATGAGGGCCACATGGACAGAGGCCGGCTCGGCCCAACC
 TCTGCCCTGGGAGTGACCGCTGTGCCAACCTCTGTCCCTACAGGGCAGCCCCG
 AGAACCACAGGTGTACACCTGCCCCCATCCCGGGAGGAGATGACCAAGAACC
 AGGTACGCCTGACCTGCCTGGTCAAAGGCTTCTACCCAGCGACATCGCCGTG
 GAGTGGGAGAGCAATGGGCAGCCGGAGAACAACCTACAAGACCACACCTCCCAT
 GCTGGACTCCGACGGCTCCTTCTTCTCTACAGCAAGCTCACCGTGGACAAGA
 GCAGGTGGCAGCAGGGGAACGTCTTCTCATGCTCCGTGATGCATGAGGCTCTG
 CACAACCACTACACGCAGAAGAGCCTCTCCCTGTCTCCGGGTAAATGA (SEQ
 ID NO:54)

Figure 22C 4.1.1 IgG2 Heavy Chain Protein

MEFGLSWVFLVALLRGVQCQVQLVESGGGVVQPGRSLRLSCVASGFTFSS
 HGMHWVRQAPGKLEWVAVIWDGRNKYYADSVKGRFTISRDNKNTLFLQMN
 SLRAEDTAVYYCARGGHFGPFDYWGGTLVTVSSASTKGPSVFPLAPCSRSTS
 ESTAALGCLVKDYFPEPVTLSWNSGALTSGVHTFPAVLQSSGLYSLSSVVTVP
 SSNFGTQTYTCNVDPKPSNTKVDKTVKCCVECPPCPAPPVAGPSVFLFPPK
 PKDTLMI SRTPEVTCVVVDVSHEDPEVQFNWYVDGVEVHNAKTKPREEQFNST
 FRVVSVLTVVHQDWLNGKEYKCKVSNKGLPAPIEKTISKTKGQPREPQVYTLF
 PSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPMLDSGDSFF
 LYSKLTVDKSRWQQGNVFCFSVMHEALHNHYTQKSLSLSPGK (SEQ ID
 NO:63)

Figure 22D 4.1.1 IgG2 Heavy Chain cDNA N294Q

ATGGAGTTTGGGCTGAGCTGGGTTTTCTCGTTGCTCTTTTAAGA
 GGTGTCCAGTGT CAGGTGCAGCTGGTGGAGTCTGGGGGAGGCGTGGTCCAG
 CCTGGGAGGTCCCTGAGACTCTCCTGTGTAGCGTCTGGATTACCTTCAGTAG
 CCATGGCATGCACTGGGTCCGCCAGGCTCCAGGCAAGGGGCTGGAGTGGGTGG
 CAGTTATATGGTATGATGGAAGAAATAAATACTATGCAGACTCCGTGAAGGGC
 CGATTACCATCTCCAGAGACAATTCCAAGAACACGCTGTTTCTGCAAATGAA
 CAGCCTGAGAGCCGAGGACACGGCTGTGTATTACTGTGCGAGAGGAGGTCACT
 TCGGTCTTTTTGACTACTGGGGCCAGGGAACCCTGGTCACCGTCTCCTCAGCC
 TCCACCAAGGGCCCATCGGTCTTCCCCCTGGCGCCCTGCTCCAGGAGCACCTC
 CGAGAGCACAGCGGCCCTGGGCTGCCTGGTCAAGGACTACTTCCCCGAACCGG
 TGACGGTGTCTGTGGAACCTCAGGCGCTCTGACCAGCGGCGTGACACCTTCCCA
 GCTGTCTACAGTCTCAGGACTCTACTCCCTCAGCAGCGTGGTGACCGTGCC
 CTCCAGCAACTTCGGCACCCAGACCTACACCTGCAACGTAGATCACAAGCCCA
 GCAACACCAAGGTGGACAAGACAGTTGAGCGCAAATGTTGTGTGCGAGTGCCCA
 CCGTGCCAGCACCACTGTGGCAGGACCGTCAGTCTTCCTCTTCCCCCCTAAA
 ACCCAAGGACACCCTCATGATCTCCCGGACCCCTGAGGTCACGTGCGTGGTGG
 TGGACGTGAGCCACGAAGACCCCGAGGTCCAGTTCAACTGGTACGTGGACGGC
 GTGGAGGTGCATAATGCCAAGACAAAGCCACGGGAGGAGCAGTTCCAAGCAC
 GTTCCGTGTGGTCAAGCTCTCACCGTTGTGCACCAGGACTGGCTGAACGGCA
 AGGAGTACAAGTGCAAGGTCTCCAACAAAGGCCTCCAGCCCCCATCGAGAAA
 ACCATCTCCAAAACCAAAGGGCAGCCCCGAGAACCACAGGTGTACACCCTGCC
 CCCATCCCGGGAGGAGATGACCAAGAACCAGGTGACCTGACCTGCCTGGTCA
 AAGGCTTCTACCCAGCGACATCGCCGTGGAGTGGGAGAGCAATGGGCAGCCG
 GAGAACAACCTACAAGACCACACCTCCCATGCTGGACTCCGACGGCTCCTTCTT
 CCTCTACAGCAAGCTCACCGTGGACAAGAGCAGGTGGCAGCAGGGGAACGTCT
 TCTCATGCTCCGTGATGCATGAGGCTCTGCACAACCACTACACGCAGAAGAGC
 CTCTCCCTGTCTCCGGGTAAATGA (SEQ ID NO:55)

Figure 22E 4.1.1 IgG2 Heavy Chain Protein N294Q

MEFGLSWVFLVALLRGVQCQVQLVESGGGVVQPGRSLRLSCVASGFTFSS
 HGMHWVRQAPGKGLEWVAWIYDGRNKYYADSVKGRFTISRDN SKNTLFLQMN
 SLRAEDTAVYYCARGGHFGPFDYWQGTLTVSSASTKGPSVFPLAPCSRSTS
 ESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVVTVP
 SSNFGTQTYTCNV DHKPSNTKVDKTV ERKCCVECPPCPAPPVAGPSVFLFPPK
 PKDTLMISRTP E VTCVVVDVSHEDPEVQFNWYVDGVEVHNAKTKPREEQFQST
 FRVVS VLT VVHQDWLNGKEYKCKVSNKGLPAPIEKTISKTKGQPREPQVYTL P
 PSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPMLDSDGSFF
 LYSKLTVDKSRWQQGNV FSCSVMHEALHNHYTQKSLSLSPGK (SEQ ID
 NO:64)

Figure 22F 4.1.1 Kappa Chain DNA

ATGGAAACCCAGCGCAGCTTCTCTTCCTCCTGCTACTCTGGCTC
CCAGATAACCACCGGAGAAATTGTGTTGACGCAGTCTCCAGGCACCCTGTC
 TTTGTCTCCAGGGGAAAGAGCCACCCTCTCCTGCAGGGCCAGTCAGAGTATTA
 GCAGCAGCTTCTTAGCCTGGTACCAGCAGAGACCTGGCCAGGCTCCCAGGCTC
 CTCATCTATGGTGCATCCAGCAGGGCCACTGGCATCCCAGACAGGTTCAAGTGG
 CAGTGGGTCTGGGACAGACTTCACTCTCACCATCAGCAGACTGGAGCCTGAAG
 ATTTTGCAGTGTATTACTGTCAGCAGTATGGTACCTCACCTGGACGTTTCGGC
 CAAGGGACCAAGGTGGAAATCAAACGAACTGTGGCTGCACCATCTGTCTTCAT
 CTTCCCGCCATCTGATGAGCAGTTGAAATCTGGAAGTGCCTCTGTTGTGTGCC
 TGCTGAATAACTTCTATCCCAGAGAGGGCCAAAGTACAGTGAAGGTGGATAAC
 GCCCTCCAATCGGGTAACTCCCAGGAGAGTGTACAGAGCAGGACAGCAAGGA
 CAGCACCTACAGCCTCAGCAGCACCCTGACGCTGAGCAAAGCAGACTACGAGA
 AACACAAAGTCTACGCCTGCGAAGTCACCCATCAGGGCCTGAGCTCGCCCGTC
 ACAAAGAGCTTCAACAGGGGAGAGTGTTAG (SEQ ID NO:56)

Figure 22G 4.1.1 Kappa Chain Protein

METPAQLLFLLLLWLPLDTTGEIVLTQSPGTLSSLSPGERATLSCRASQSI
 SSFLAWYQQRPGQAPRLLIYGASSRATGIPDRFSGSGSGTDFTLTISRLEPED
 FAVYYCQQYGTSPWTFGQGTKVEIKRTVAAPSVFIFPPSDEQLKSGTASVCL
 LNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKSTYSLSTLTLSKADYEK
 HKVYACEVTHQGLSSPVTKSFNRGEC (SEQ ID NO:65)

Figure 22H 4.8.1 Heavy Chain DNA

ATGGAGTTTGGGCTGAGCTGGGTTTTCTCGTTGCTCTTTTAAGA
GGTGTCCAGTGTCAGGTGCAGCTGGTGGAGTCTGGGGGAGGCGTGGTCCAG
 CCTGGGAGGTCCCTGAGACTCTCCTGTACAGCGTCTGGATTACCTTCAGTAA
 CTATGGCATGCACTGGGTCCGCCAGGCTCCAGGCAAGGGGCTGGAGTGGGTGG
 CAGTTATATGGTATGATGGAAGTAATAAACACTATGGAGACTCCGTGAAGGGC
 CGATTCACCATCTCCAGTGACAATTCCAAGAACACGCTGTATCTGCAAATGAA
 CAGCCTGAGAGCCGAGGACACGGCTGTGTATTACTGTGCGAGAGGAGAGAGAC
 TGGGGTCTCTACTTTGACTACTGGGGCCAGGGAACCCTGGTCACCGTCTCCTCA
 GCCTCCACCAAGGGCCCATCGGTCTTCCCCCTGGCGCCCTGCTCCAGGAGCAC
 CTCCGAGAGCACAGCGGCCCTGGGCTGCCTGGTCAAGGACTACTTCCCCGAAC
 CGGTGACGGTGTCTGTGGAAGTCAAGGCGCTCTGACCAGCGGCGTGCACACCTTC
 CCAGCTGTCTTACAGTCTCCTCAGGACTCTACTCCCTCAGCAGCGTGGTGACCGT
 GCCCTCCAGCAACTTCGGCACCCAGACCTACACCTGCAACGTAGATCACAAGC
 CCAGCAACACCAAGGTGGACAAGACAGTTGAGCGCAAATGTTGTGTGCGAGTGC
 CCACCGTGGCCAGCACCACTGTGGCAGGACCGTCAGTCTTCTCTTCCCCC
 AAAACCCCAAGGACACCTCATGATCTCCCGGACCCCTGAGGTACAGTGCCTGG
 TGGTGACGTGAGCCACGAAGACCCCGAGGTCCAGTTCAACTGGTACGTGGAC
 GGCGTGGAGGTGCATAATGCCAAGACAAAGCCACGGGAGGAGCAGTTCAACAG
 CACGTTCCGTGTGGTCAGCGTCTTACCCTTGTGCACCAGGACTGGCTGAACG
 GCAAGGAGTACAAGTGCAAGGTCTCCAACAAAGGCCTCCAGCCCCCATCGAG
 AAAACCATCTCCAAAACCAAGGGCAGCCCCGAGAACCACAGGTGTACACCCT
 GCECCATCCCGGGAGGAGATGACCAAGAACCAGGTACGCTGACCTGCCTGG
 TCAAAGGCTTCTACCCAGCGACATCGCCGTGGAGTGGGAGAGCAATGGGCAG
 CCGGAGAACAACACTACAAGACCACACCTCCCATGCTGGACTCCGACGGCTCCTT
 CTTCTCTACAGCAAGCTCACCGTGGACAAGAGCAGGTGGCAGCAGGGGAACG
 TCTTCTCTACGTCCTCGTGATGCATGAGCTCTGCACAACCACTACACGCAGAAG
 AGCCTCTCCCTGTCTCCGGGTAAATGA (SEQ ID NO:57)

Figure 22I 4.8.1 Heavy Chain Protein

MEFGLSWVFLVALLRGVQCQVQLVESGGGVVQPGRSLRLSCTASGFTFSN
YGMHWVRQAPGKGLEWVAVIWDGSKNHYGDSVKGRFTISSDNSKNTLYLQMN
SLRAEDTAVYYCARGERLGSYFDYWGQGLTVTVSSASTKGPSVFPLAPCSRST
SESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTV
PSSNFGTQTYTCNVDPKPSNTKVDKTVERKCCVECPPCPAPPVAGPSVFLFPP
KPKDTLMISRTPEVTCVVVDVSHEDPEVQFNWYVDGVEVHNAKTKPREEQFNS
TFRVSVSLTVVHQDWLNGKEYKCKVSNKGLPAPIEKTISKTKGQPREPQVYTL
PPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPMLDSDGSF
FLYSKLTVDKSRWQQGNVFSCSVMEALHNHYTQKSLSLSPGK (SEQ ID
NO:66)

Figure 22J 4.8.1 Kappa Chain DNA

ATGGAAACCCAGCGCAGCTTCTCTTCCTCCTGCTACTCTGGCTC
CCAGATACCACCGGAGAAATTGTGTTGACGCAGTCTCCAGGCACCCTGTC
TTTGTCTCCAGGGGAAAGAGCCACCCTCTCCTGCAGGACCAGTGTTAGCAGCA
GTTACTTAGCCTGGTACCAGCAGAAACCTGGCCAGGCTCCCAGGCTCCTCATC
TATGGTGCATCCAGCAGGGCCACTGGCATCCCAGACAGGTTCACTGGCAGTGG
GTCTGGGACAGACTTCACTCTCACCATCAGCAGACTGGAGCCTGAAGATTTTG
CAGTCTATTACTGTCAGCAGTATGGCATCTCACCTTCACTTTCGGCGGAGGG
ACCAAGGTGGAGATCAAGCGAACTGTGGCTGCACCATCTGTCTTCATCTTCCC
GCCATCTGATGAGCAGTTGAAATCTGGAACCTGCCTCTGTTGTGTGCCTGCTGA
ATAACTTCTATCCCAGAGAGGCCAAAGTACAGTGGAAGGTGGATAACGCCCTC
CAATCGGGTAACTCCCAGGAGAGTGTACAGAGCAGGACAGCAAGGACAGCAC
CTACAGCCTCAGCAGCACCTTGACGCTGAGCAAAGCAGACTACGAGAAACACA
AAGTCTACGCCTGCGAAGTCACCCATCAGGGCCTGAGCTCGCCCGTCACAAAG
AGCTTCAACAGGGGAGAGTGTTAG (SEQ ID NO:58)

Figure 22K 4.8.1 Kappa Chain Protein

METPAQLLFLLLLWLPDTTGEIVLTQSPGTLSSLSPGERATLSCRTSVSSS
YLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGSGTDFTLTISRLEPEDFA
VYYCQQYGISPFTFGGGTKVEIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLN
NFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSSTYSLSSTLTLSKADYEKHK
VYACEVTHQGLSSPVTKSFNRGEC (SEQ ID NO:67)

Figure 22L 6.1.1 Heavy Chain DNA

ATGGAGTTTGGGCTGAGCTGGGTTTTCTCGTTGCTCTTTTAAGA
 GGTGTCCAGTGT CAGGTGCAGCTGGTGGAGTCTGGGGGAGGCGTGGTCGAG
 CCTGGGAGGTCCCTGAGACTCTCCTGTACAGCGTCTGGATTACCTTCAGTAG
 TTATGGCATGCACTGGGTCCGCCAGGCTCCAGGCAAGGGGCTGGAGTGGGTGG
 CAGTTATATGGTATGATGGAAGCAATAAACACTATGCAGACTCCGCGAAGGGC
 CGATTCACCATCTCCAGAGACAATTCCAAGAACACGCTGTATCTGCAAATGAA
 CAGCCTGAGAGCCGAGGACACGGCTGTGTATTACTGTGCGAGAGCCGACTGC
 TGGGTTACTTTGACTACTGGGGCCAGGGAACCCTGGTCACCGTCTCCTCAGCC
 TCCACCAAGGGCCCATCGGTCTTCCCCCTGGCGCCCTGCTCCAGGAGCACCTC
 CGAGAGCACAGCGGCCCTGGGCTGCCTGGTCAAGGACTACTTCCCCGAACCGG
 TGACGGTGTCTGGAACCTCAGGCGCTCTGACCAGCGGCGTGCACACCTTCCCA
 GCTGTCTACAGTCTCAGGACTCTACTCCCTCAGCAGCGTGGTGACCGTGCC
 CTCCAGCAACTTCGGCACCCAGACCTACACCTGCAACGTAGATCACAAGCCCA
 GCAACACCAAGGTGGACAAGACAGTTGAGCGCAAATGTTGTGTGCGAGTGCCCA
 CCGTGCCAGCACCACTGTGGCAGGACCGTCAGTCTTCCTCTTCCCCCCAAA
 ACCCAAGGACACCCTCATGATCTCCCGGACCCCTGAGGTACAGTGCGTGGTGG
 TGGACGTGAGCCACGAAGACCCCGAGGTCCAGTTCAACTGGTACGTGGACGGC
 GTGGAGGTGCATAATGCCAAGACAAAGCCACGGGAGGAGCAGTTCAACAGCAC
 GTTCCGTGTGGTCAGCGTCTCACC GTTGTGCACCAGGACTGGCTGAACGGCA
 AGGAGTACAAGTGCAAGGTCTCCAACAAAGGCCTCCCAGCCCCCATCGAGAAA
 ACCATCTCCAAAACCAAAGGGCAGCCCCGAGAACCACAGGTGTACACCCTGCC
 CCCATCCCGGGAGGAGATGACCAAGAACCAGGTGAGCCTGACCTGCCTGGTCA
 AAGGCTTCTACCCAGCGACATCGCCGTGGAGTGGGAGAGCAATGGGCAGCCG
 GAGAACA ACTACAAGACCACACCTCCCATGCTGGACTCCGACGGCTCCTTCTT
 CCTCTACAGCAAGCTCACCGTGGACAAGAGCAGGTGGCAGCAGGGGAACGTCT
 TCTCATGCTCCGTGATGCATGAGGCTCTGCACAACCACTACACGCAGAAGAGC
 CTCTCCCTGTCTCCGGGTAAATGA (SEQ ID NO:59)

Figure 22M 6.1.1 Heavy Chain Protein

MEFGLSWVFLVALLRGVQCQVQLVESGGGVVEPGRSLRLSCTASGFTFSS
 YGMHWVRQAPGKGLEWVAVIWDGNSNKHYSADSAKGRFTISRDN SKNTLYLQMN
 SLRAEDTAVYYCARAGLLGYFDYWGQGLTVTVSSASTKGPSVFPLAPCSRSTS
 ESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVVTVP
 SSNFGTQTYTCNV D HKPSNTKVDKTVERKCCVECPPCPAPPVAGPSVFLFPPK
 PKDTLMISRTP E V T C V V D V S H E D P E V Q F N W Y V D G V E V H N A K T K P R E E Q F N S T
 F R V V S V L T V V H Q D W L N G K E Y K C K V S N K G L P A P I E K T I S K T K G Q P R E P Q V Y T L P
 P S R E E M T K N Q V S L T C L V K G F Y P S D I A V E W E S N G Q P E N N Y K T T P P M L D S D G S F F
 L Y S K L T V D K S R W Q Q G N V F S C S V M H E A L H N H Y T Q K S L S L S P G K (SEQ ID
 NO:68)

Figure 22N 6.1.1 Kappa Chain DNA

ATGGAAACCCAGCGCAGCTTCTCTTCCTCCTGCTACTCTGGCTC
CCAGATAACCACCGGAGAAATTGTGTTGACGCAGTCTCCAGGCACCCTGTC
 TTTGTCTCCAGGGGAAAGAGCCACCCTCTCCTGTAGGGCCAGTCAAAGTGTTA
 GCAGCTACTTAGCCTGGTACCAACAGAAACCTGGCCAGGCTCCAGGCCCTC
 ATCTATGGTGTATCCAGCAGGGCCACTGGCATCCCAGACAGGTTCACTGGCAG
 TGGGTCTGGGACAGACTTCACTCTCACCATCAGCAGACTGGAGCCTGAAGATT
 TTGCAGTGTATTACTGTCAGCAGTATGGTATCTCACCATTCACTTTTCGGCCCT
 GGGACCAAAGTGGATATCAAACGAACTGTGGCTGCACCATCTGTCTTCATCTT
 CCCGCCATCTGATGAGCAGTTGAAATCTGGAACTGCCTCTGTTGTGTGCCTGC
 TGAATAACTTCTATCCCAGAGAGGCCAAAGTACAGTGAAGGTGGATAACGCC
 CTCCAATCGGGTAACTCCCAGGAGAGTGTACAGAGCAGGACAGCAAGGACAG
 CACCTACAGCCTCAGCAGCACCTGACGCTGAGCAAAGCAGACTACGAGAAAC
 ACAAAGTCTACGCCTGCGAAGTCACCCATCAGGGCCTGAGCTCGCCCGTCACA
 AAGAGCTTCAACAGGGGAGAGTGTTAG (SEQ ID NO:60)

Figure 22O 6.1.1 Kappa Chain Protein

METPAQLLFLLLLWLPTTTGEIVLTQSPGTLSPGERATLSCRASQSVS
 SYLAWYQQKPGQAPRPLIYGVSSRATGIPDRFSGSGSGTDFTLTISRLEPEDF
 AVYYCQQYGISPFITFGPGTKVDIKRTVAAPSVFIFPPSDEQLKSGTASVVCLL
 NNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSYSTLSSTLTLSKADYEKH
 KVYACEVTHQGLSSPVTKSFNRGEC (SEQ ID NO:69)

Figure 22P 11.2.1 IgG2 Heavy Chain DNA:

ATGGAGTTTGGGCTGAGCTGGGTTTTCTCCTCGTTGCTCTTTTAAGA
GGTGTCCAGTGTCAGGTGCAGCTGGTGGAGTCTGGGGGAGGCGTGGTCCAG
 CCTGGGAGGTCCCTGAGACTCTCCTGTGCAGCGTCTGGATTACCTTCAGTAG
 CTATGGCATGCACTGGGTCCGCCAGGCTCCAGGCAAGGGGCTGGAGTGGGTGG
 CAGTTATATGGTATGATGGAAGTAATAAATACTATGCAGACTCCGTGAAGGGC
 CGATTACCATCTCCAGAGACAATTCCAAGAACACGCTGTATCTGCAAATGAA
 CAGCCTGAGAGCCGAGGACACGGCTGTGTATTACTGTGCGAGAGATCCGAGGG
 GAGCTACCCTTTACTACTACTACTACGGTATGGACGTCTGGGGCCAAGGGACC
 ACGGTCACCGTCTCCTCAGCCTCCACCAAGGGCCCATCGGTCTTCCCCCTGGC
 GCCCTGCTCCAGGAGCACCTCCGAGAGCACAGCGGCCCTGGGCTGCCTGGTCA
 AGGACTACTTCCCCGAACCGGTGACGGTGTCTGTTGAACTCAGGCGCTCTGACC
 AGCGGCGTGCACACCTTCCCAGCTGTCTTACAGTCCTCAGGACTCTACTCCCT
 CAGCAGCGTGGTGACCGTGCCCTCCAGCAACTTCGGCACCCAGACCTACACCT
 GCAACGTAGATCACAAGCCCAGCAACACCAAGGTGGACAAGACAGTTGAGCGC
 AAATGTTGTGTCGAGTGCCCAACCGTGCCCAAGCACCACTGTGGCAGGACCGTC
 AGTCTTCTCTTCCCCCAAAACCAAGGACACCCTCATGATCTCCCGGACCC
 CTGAGGTACAGTGCGTGGTGGTGAGCTGAGCCACGAAGACCCGAGGTCCAG
 TTCAACTGGTACGTGGACGGCGTGGAGGTGCATAATGCCAAGACAAAGCCACG
 GGAGGAGCAGTTCAACAGCACGTTCCGTGTGGTTCAGCGTCTCACCCTGTGTC
 ACCAGGACTGGCTGAACGGCAAGGAGTACAAGTGCAAGGTCTCCAACAAAGGC
 CTCCCAGCCCCCATCGAGAAAACCATCTCCAAAACCAAGGGGCAGCCCCGAGA
 ACCACAGGTGTACACCTTGCCCCATCCCGGGAGGAGATGACCAAGAACCAGG
 TCAGCCTGACCTGCCTGGTCAAAGGCTTCTACCCAGCGACATCGCCGTGGAG
 TGGGAGAGCAATGGGCAGCCGGAGAACAATAACAAGACCACACCTCCCATGCT
 GGACTCCGACGGCTCCTTCTTCTCTACAGCAAGCTCACCGTGGACAAGAGCA
 GGTGGCAGCAGGGGAACGTCTTCTCATGCTCCGTGATGCATGAGGCTCTGCAC
 AACCCTACACGCAGAAGAGCCTCTCCCTGTCTCCGGGTAAATGA (SEQ ID
 NO:61)

Figure 22Q 11.2.1 IgG2 Heavy Chain Protein:

QVQLVESGGGVVQPGRSLRLSCAASGFTFSSYGMHWVRQAPGKGLEWVAVIYW
 DGSNKYYADSVKGRFTISRDN SKNTLYLQMNSLRAEDTAVYYCARDPRGATLY
 YYYYGMDVWGQGT TTVTVSSASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFP
 EPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSNFGTQTYTCNVDH
 KPSNTKVKDKTVERKCCVECPPCPAPPVAGPSVFLFPPKPKDTLMISRTPEVTC
 VVVDVSHEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTFRVVS VLT TVVHQDWL
 NGKEYKCKVSNKGLPAPIEKTISKTKGQPREPQVYTLPPSREEMTKNQVSLTC
 LVKGFYPSDIAVEWESNGQPENNYKTTTPMLDSDGSFFLYSKLTVDKSRWQQG
 NVFSCSVMEALHNHYTQKSLSLSPGK (SEQ ID NO:70)

Figure 22R 11.2.1 IgG2 Kappa Chain DNA:

ATGGACATGAGGGTCCCCGCTCAGCTCCTGGGGCTCCTGCTACTC
 TGGCTCCGAGGTGCCAGATGTGACATCCAGATGACCCAGTCTCCATCCT
 CCCTGTCTGCATCTGTAGGAGACAGAGTCACCATCACTTGCCGGGCAAGTCAG
 AGCATTAAACAGCTATTTAGATTGGTATCAGCAGAAACCAGGGAAAGCCCCTAA
 ACTCCTGATCTATGCTGCATCCAGTTTGCAAAGTGGGGTCCCATCAAGGTTCA
 GTGGCAGTGGATCTGGGACAGATTTCACTCTCACCATCAGCAGTCTGCAACCT
 GAAGATTTTGCAACTTACTACTGTCAACAGTATTACAGTACTCCATTCACTTT
 CGGCCCTGGGACCAAAGTGGAATCAAACGAACTGTGGCTGCACCATCTGTCT
 TCATCTTCCCGCCATCTGATGAGCAGTTGAAATCTGGAAGTGCCTCTGTTGTG
 TGCCTGCTGAATAACTTCTATCCCAGAGAGGCCAAAGTACAGTGGAAGGTGGA
 TAACGCCCTCCAATCGGGTAACTCCCAGGAGAGTGTACAGAGCAGGACAGCA
 AGGACAGCACCTACAGCCTCAGCAGCACCTGACGCTGAGCAAAGCAGACTAC
 GAGAAACACAAAGTCTACGCCTGCGAAGTCACCCATCAGGGCCTGAGCTCGCC
 CGTCACAAAGAGCTTCAACAGGGGAGAGTGTTAGTGA (SEQ ID NO:62)

Figure 22S 11.2.1 IgG2 Kappa Chain Protein:

DIQMTQSPSSLSASVGDRVITITCRASQSINSYLDWYQQKPGKAPKLLIYAASS
 LQSGVPSRFSGSGSGTDFTLTISSLQPEDFATYYCQQYYSTPFTFGPGTKVEI
 KRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNS
 QESVTEQDSKDSSTLSSTLTLSKADYKHKVYACEVTHQGLSSPVTKSFNRG
 EC (SEQ ID NO:71)